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Inclusive Education
Meeting Preservice Training Needs

by

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Lorraine MacPherson-Court

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DEDICATION

In loving memory of Glen A. MacPherson who first introduced me to many of the social conditions affecting education.

To Laura and Emily Court who continue to surprise and inspire me with new and wonderful journeys.

Abstract

The education of students with exceptional needs in the regular classroom is known currently as inclusion or inclusive schooling. Chapter 1 of this thesis provides a brief overview of inclusive education and examples of innovative teacher education programs that promote inclusive education. Chapter 2 of this thesis continues to address teachers' educational needs by investigating in greater detail teacher competencies required in inclusive settings. The results of a detailed analysis of a comprehensive survey on inclusive education is presented in order to elucidate topics of high priority for the education of teachers in inclusive settings. In Chapter 3, options for the design and delivery of courses delivered via the Internet are reviewed. The process of building an Internet course is highlighted. If deemed an appropriate format for presenting information, this course could be used as a model for developing other training packages. The final chapter summarizes some of the competencies required by teachers working in inclusive settings. This chapter also proposes alternative ways of meeting the needs of preservice and service teachers working in these settings.

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CHAPTER 1

Introduction

The field of Special Education has undergone tremendous change since the 1960's. We have moved from educating students with exceptional needs in institutions, special schools, and special classes, to educating most children in regular classrooms. The education of students with exceptional needs in the regular classroom with all of their needs being met in the regular classroom, is known currently as inclusion or inclusive schooling (Winzer, 1999). Successful inclusion is dependent upon changes to current teacher education programs, curriculum pedagogy, and overall changes in school restructuring (Hamill, Jantzen, & Bargerhuff, 1999). The following is a brief overview of inclusive education and examples of innovative teacher education programs that promote inclusive education. This is followed by a brief overview of the teacher competencies required in inclusive settings and alternative delivery mechanisms used to meet the needs of learners.

Inclusive Education

Inclusive education has been the topic of many educational research studies since the 1960's. Terms such as normalization, least restrictive environment, mainstreaming, integration, and inclusion have dominated the literature on the education of students with exceptional needs. Normalization implies that students with exceptional needs should be exposed to experiences similar to those of their peers. Similarly, least restrictive environment implies that individuals should be placed in environments (i.e., home, school, and community) that are as close to 'normal' as possible. Mainstreaming, integration, and inclusive schooling are terms that are often used interchangeably; definitions of these terms will vary depending on the literature cited. A report on *Integrating Exceptional Students in the Mainstream* (Alberta Education, 1991) included three definitions to help clarify terms for educators in Alberta. In brief, *mainstreaming* is the act of combining the skills of regular and special educators to ensure that all children have equal education opportunities in the least restrictive environment. *Integration* is the process of including students with exceptional needs into the regular school program. *Inclusive schooling* provides education for all students in a regular classroom, regardless of the nature of the student's disability. The difference between an inclusive school and a school that practices mainstreaming or integration, is that "inclusive schools develop accommodating environments for all students, while mainstreaming or integration practices attempt to fit certain students into what currently exists" (Alberta Education, 1991, p. 3). In Alberta, inclusion is advocated as the first choice when determining placement of students.

The shift from segregated education to inclusive schools has been largely the result of advocacy for the integration of individuals with disabilities into all areas of community life (Sobsey & Dreimanis, 1993). The shift to inclusive schools has also been supported in the literature by researchers who compared the effectiveness of integrated verses segregated educational settings (Carlberg & Kavale, 1980; Wang & Baker, 1985-86). These two studies have been cited by other authors as examples of exemplary research which supports inclusive education (Alberta Education, 1991; Gartner & Lipsky, 1989; Sailor, 1991; Skrtic, 1991; Sobsey & Dreimanis, 1993).

In the 1980's, two meta-analyses were conducted on efficacy studies involving children with special needs in segregated verses integrated settings (Carlberg & Kavale, 1980; Wang & Baker, 1985-86). Meta-analysis, or the analysis of analyses, refers to the "statistical analysis of a large collection of results from individual studies for the purpose of integrating the results" (Glass, 1976, p. 3). In their review of the literature, Carlberg and Kavale (1980) found that results of efficacy studies on integrated verses segregated settings were inconclusive. For example, several of the studies under review showed little or no treatment effect. Many studies possessed little statistical power, a problem which possibly masked small treatment effects. In addition, the internal validity of several other studies was weakened by the possibility that the control or treatment group had started out with an advantage. To help resolve some of these problems, Carlberg and Kavale (1980) conducted a meta-analysis on 50 studies from a pool of 860 that met their selection criteria. All but two of these studies had been published between the 1950's and the 1980's.

The results of the meta-analyses depended on the classification of students involved in the analysis (Carlberg & Kavale, 1980). In general, a special class placement had negative effects on students whose primary disability was a lower IQ (IQ 75 to 90) or an intellectual disability (IQ 50 to 75), (number of effect sizes = 249). However, some students who were classified with learning disabilities (LD), behavioral disorders, or emotional disorders (BD/ED) were better off in special education placements (number of effect sizes = 38 and 35 respectively). Effect sizes were not calculated for students who had severe intellectual disabilities and/or multiple disabilities, therefore no accurate conclusions can be made about these populations using the studies involved.

Wang and Baker (1985-86) also conducted meta-analyses on 11 empirical studies published between 1975 and 1984. Eighty-three percent of these studies provided information regarding the exceptionalities of the subjects. Fifty-three percent were classified as having an intellectual disability, 3% were learning disabled, 19% were hearing-impaired, and 25% were of mixed categories. Wang and Baker concluded that their results supported the effectiveness of mainstreaming in improving performance (i.e., measure of achievement in academic subjects), attitudinal outcomes (i.e., students' self-concepts and attitudes towards learning, and attitudes of nondisabled and disabled students towards each other), and process outcomes for students with disabilities (i.e., interactions between teachers and students and among students).

In the 1990's, Hunt and Farron-Davis (1992) conducted an efficacy study on inclusion by analyzing the Individual Education Plans (IEP's) written by special education teachers for students with severe disabilities in both regular and special education settings. The IEP's for the study were selected from students who were currently attending a general education classroom fulltime, and who had previously attended a special class program. Hunt and Farron-Davis included only those students in the study who were being supported in the general education classroom by the *same* teacher who had supported them in the special education classroom. The teacher must have also been responsible for writing the IEPs' for the students when they were in a special education classroom as well as a regular classroom. Eleven teachers were identified for the study from seven states. Each teacher was required to submit two IEP's for two randomly selected students. The IEP's were analyzed for quality (i.e., age appropriateness, functionality of skills, and generalization of skills to natural settings) and curricular content (i.e., communication, social motor, vocational, domestic, community, recreation/leisure, and academic skills). Hunt and Farron-Davis found that the IEP's from the general education classroom were significantly better in overall quality. These IEP's included a significantly higher number of objectives which promoted social interaction between peers with and without disabilities, and a higher percentage of the number of objectives taught in natural settings.

The shift between educating students with disabilities in special classrooms to regular classrooms has been well documented in the pertinent literature of the last several decades. Articles debating the "pros and cons" of inclusion have been replaced with articles researching process. Many school boards and universities across Canada and the United States are committed to the concept of inclusive education. Their focus now is to determine how best to meet the needs of teachers and students in inclusive settings. As a result, many articles describing innovative training programs and the competencies required of teachers working in inclusive settings have surfaced over the last decade (Aiello & Bullock, 1999; Elliott & MaKenney, 1998; Johnson, 1999; Hutchinson & Martin, 1999; Lesar, Benner, Habel, & Colemann, 1997; Peterson & Beloin, 1999; Sobel, French, & Filbin 1998; Schlichter et al., 1997; Sprague & Pennell, 2000). I discuss some of these innovative training programs below.

Innovative Training Programs

Many school systems are becoming more creative in keeping up with the training needs of educators at the preservice level as they prepare them for work in inclusive settings. For example, in order to foster inclusive beliefs and practices during preservice teacher education, Queen's University Faculty of Education piloted a re-structured teacher education program (Hutchinson & Martin, 1999). The pilot involved 28 elementary teacher candidates beginning their program on a 4-month extended field experience. During these 4 months, the candidates also participated in two courses, one on "Critical Issues" (focusing on equity issues and inclusion of exceptional learners), the other on "Research, Theory, and Professional Practice." A major assignment for the candidates involved writing a case study (or dilemma) about creating an inclusive classroom for one or more exceptional learners. The early extended-field experience successfully fostered an expectation in each candidate to adapt teaching to meet the individual needs of exceptional learners. The case studies of the candidates' also portrayed high levels of inclusive beliefs and teaching, as well as critical reflection. This leads one to believe that early field experiences and practical case studies may serve to better prepare preservice teachers for inclusive settings.

A research university in Detroit Michigan rejected a curriculum which featured "a disability a week" and adopted a curriculum which provided the foundations of inclusion (Peterson & Beloin, 1998). In a similar venture, the University of Wisconsin-Stevens rejected presenting information on categorical disabilities, opting for materials focusing on curricular accommodations, peer supported instruction, strategies for developing effective Individual Education Plans, and strategies for including parents as partners in the educational process (Peterson & Beloin, 1998).

These ventures were strong preliminary steps in improving teacher preparation programs. Peterson and Beloin also advocated that teacher education include field experiences involving special education and general education preservice educators in collaborative experiences. They recommended that accommodations and supports for diversity be covered in other content courses (e.g., math, science, social studies, etc.). In addition, Peterson and Beloin also recommended that team-teaching be demonstrated by general and special education faculty in some courses in order to model and reinforce collaboration for students.

In a study by Sprague and Pennell (2000), university faculty and school personnel collaborated in a pilot preservice teacher education program to investigate the utility of having school personal participate in the preservice education of students. The faculty and school personnel designed a university course around an inclusive middle school program. Preservice education students observed inclusive classrooms demonstrating collaborative teaching. Special and regular teachers also had the opportunity to present to students strategies for planning and co-teaching, ideas for adapting instruction, and materials for students with special needs. Prior to taking the course, less than 50% of the students felt competent in co-planning and co-teaching with special educators. This percentage increased to 100% by the end of the course, demonstrating that collaborative relationships between university and school personal can lead to successful innovative preservice education models.

Sobel, French, and Filbin (1998) also implemented an innovative preservice program involving a partnership between the school district and university. Their program immersed students early in their educational program into a year-long internship at an urban school. The urban school provided students with the opportunity to work with, and observe, teachers working with students from various cultural and socio-economic backgrounds, and with various learning abilities. These students participated simultaneously in coursework and fieldwork (25 hours per week) within multidisciplinary settings where they received feedback from a mentor teacher and a university supervisor. Sobel et al., showed that the model worked well for both novice teachers and the school and university communities. The added resource of interns enabled schools to improve their services to students with special needs. Teachers reported that the regular visits from university supervisors encouraged them to implement 'best practices' from the field. Furthermore, university supervisors also found that their first-hand knowledge of student experiences enabled them to provide more meaningful course lectures.

Many changes to preservice teacher programs were designed to accommodate the changing roles of teachers. Research has shown that inclusion of students with special needs in regular classrooms has also had an impact on the role of special education teachers (Wilgosh, 1992). Increasingly, special education teachers are expected not only to teach students with special needs, but they are also expected to provide support and consultation to teachers in regular classrooms who are including students with special needs. Support may vary from assisting the classroom teacher with the development and monitoring of the Individual Education Plan, adaptations and modifications to the regular curriculum, and/or team-teaching. This expanded role requires changes to existing teacher education programs with particular emphasis on how to work collaboratively in a multi-dimensional team (Peterson & Beloin, 1998; Quigney, 1998; Wilgosh, 1992). Moreover, further change to current existing teacher education programs will depend on our understanding of the competencies by teachers to be effective in inclusive schools. Change will also depend on our understanding of the unique learning needs of preservice and service teachers.

Teacher Competencies

In order to obtain a better understanding of the required competencies of educators in an inclusive learning environment, Hamill, Jantzen, and Bargerhuff (1999) distributed 182 surveys to five schools in two of their school districts. Surveys were distributed to general education teachers (75%), special educators (18%) and administrators (2%). The survey required respondents to list competencies they believed teachers and administrators would need in order to achieve success in inclusive schools. Respondents were also required to rate, in terms of highest, medium, or lowest importance, the pre-identified competencies for teachers and administrators. Highly valued competencies for teachers included the ability to be flexible and to adapt instruction for all learners; knowledge of students with disabilities; familiarity with alternative assessments; knowledge of classroom organization and classroom management; ability to address different learning styles; and the ability to promote hands-on learning activities, self-esteem, and developmental curriculum. Similar competencies were identified for administrators, however additional administrator competencies included the ability to communicate with staff, families and community members; the ability to provide leadership through staff development, staff hiring, vision setting and funding for inclusion activities. Collaboration was identified as the most important competency for both teachers and administrators. It was concluded that university programs needed to prepare teachers for their collaborative role by providing general and special education students with opportunities to interact and share experiences with each other as well as with other preservice professionals (such as administrators, speech language pathologists, and psychologists). They also made the recommendation for faculty members to model inclusive behaviors by co-teaching university courses for general and special education.

In order to identify some of the competencies required of educators working with exceptional children, Alberta Education also distributed a survey to educators across the province (Alberta Education and Response Centre, 1991). The survey involved a random sample of 810 educational professionals (195 principals, 225 central office special education staff, 195 regular teachers and 195 full and part-time special teachers) from the six education zones in Alberta. Part of the questionnaire involved rank ordering from one to four areas in which they required assistance (one = not important to four = extremely important). The top four areas of the 44 regular classroom teachers who responded to the survey included: enrichment ideas (83.3%), special education teaching strategies (82.5%), assessment techniques (80.5%), and integration of students into the regular program (73.2%). However, the areas that teachers were to rank order as needs for assistance were very broad in nature (e.g., assessment techniques); a further breakdown of each area (e.g., limits of standardized testing, norm referenced assessment, performance based testing, etc.) is still required in order to identify areas of priority for future education planning.

Recognizing the need to obtain detailed information on competencies required of teachers working in inclusive settings, the Task Force on Integration (University of Alberta) designed and conducted a survey on the content of preservice programs (McDonald, MacPherson-Court, Sobsey, & Rousseau, 1997). The purpose of the survey was to identify important areas to be included in teacher education program for students in both general and special education in order to prepare preservice teachers for inclusive education. It is anticipated that a survey of this nature will help identify appropriate teaching strategies for teachers and students working in inclusive settings. The authors recognized that, once training needs are identified, the methods required to distribute the appropriate information to educational professionals would have to be addressed.

Training needs should be targeted for both preservice and service teachers. As ever-increasing numbers of students with diverse needs are educated in the regular classroom, researchers report that teachers often feel they lack the necessary skills required to teach students with disabilities in the regular classroom (Guetzloe, 1999; Hewitt, 1999; Lesar, Benner, Habel, & Colemann, 1997; Sprague & Pennell, 2000). However, the provision of adequate support for teachers, by providing staff development and availability of resources at both the preservice and service level, is having a positive influence on creating inclusive schools (Dickens-Smith, 1995; Demchak, 1999; Johnson, 1999). In her review, Dickens-Smith (1995) found that the attitudes of regular and special education teachers improved with adequate staff development and support. Dickens-Smith conducted a study involving 100 special education teachers and 100 regular education teachers to measure the effects of inclusion training on teacher's attitudes towards inclusion. The study involved having the teachers complete a 12-item survey before and after participating in an inservice training session on inclusion. The results of her study demonstrated that both regular and special education teachers revealed more positive attitudes towards inclusive education following staff development.

However, professional development of preservice and service teachers needs to be tailored to the needs of today's learners. A large proportion of today's students are over the age of 25, non-residential, working fulltime, and many have a family (West, 1999). Barriers involving time, place, and personal situations are creating the need for course work that is flexible and accessible off-campus. For these students the "one-test/one-delivery-mode-fits-all" approach is becoming less desirable (Distance Education, 1999; West, 1999). The realization that students cannot learn all there is to learn in a given field in a 4-year degree program, creates the desire for life long learning opportunities (Beller & Ehud, 1998; Distance Education, 1999; Robinson, Brewer, & Erickson, 1999). Many universities and schools are looking for learning opportunities that are student-centered, flexible, and offer life-long educational opportunities (Dinchak, 1999, Harra & Kling, 2000; Hutton, 1999; McGrego, Halvorsen, Fisher, Pumpian, Bhaerman, & Salisbury, 1998; Morrison & Adcock, 1999; Vrasidas & Stock McIsaac, 1999). Guetzloe (1999), recommends that in order to meet the training needs of teachers, professional development activities should include the following characteristics: a menu of offerings as opposed to the same training requirements for all; long-term offerings; teacher support groups or mentors, a professional library of books and resources; university courses, workshops and consultants; and regional, national, and international conferences. Using alternative deliveries, such as placing course materials on the Internet, for preservice teachers and for professional development purposes, may help meet the requirements of the flexibility and convenience required by many preservice and service teachers.

Alternative Deliveries

Several researchers have been using the Internet to meet the unique needs of learners. Dinchak (1999) used the Internet as a delivery method for a college level English course. During the course students had the opportunity to publish their compositions on the Internet, and to connect with other classmates by collaborating with and linking to others. The result was several web-portfolio's that provided student's with documented feedback regarding their learning process. However, these portfolio's also became valuable learning tools for other students. Clearly, the use of web portfolio's can be applied to many other teaching situations, such as the sharing case studies highlighting teaching strategies used by teachers working in inclusive settings.

Co-developing and co-teaching was the focus of a study conducted by O'Shea, Williams, and Sattler (1999). These authors used the e-mail system as an innovative way to enhance collaboration between special education and regular education. The study involved pairing elementary education students (n = 54) who were enrolled in a language arts course, with special education students (n = 49) who were enrolled in a behavioral and learning disabilities course. The students were required to share and problem-solve using case studies of students with disabilities. Evidence of student interactions were obtained from the rate of student e-mail correspondence, as well as through their thematic unit activities (elementary students) and a summary of educational decisions on adapted or modified thematic units (special education students). Preservice teachers reported that as a result of their experiences, they were in a better position to design instruction and adapt activities. They also felt that they were better able to work with others in shared decision-making situations.

Fisher, Deshler and Schumaker (1999) designed an interactive multimedia program to determine whether this type of medium was an effective method for teaching preservice and service teachers knowledge about inclusive strategies. The authors designed two teacher development programs, a virtual workshop and an actual workshop, for an inclusive practice call the Concept Mastery Routine. The virtual workshop involved a computer based hypermedia program. The program provided the rationale behind the routine, a thorough description of the routine, model demonstrations, the opportunity for students to practice constructing diagrams and receive feedback, and the opportunity to practice answering questions. The actual workshop followed a more traditional format involving a presentation by a live expert using a lecture format. Both workshops covered the same content, preservice and service teachers were randomly assigned to each workshop. Upon completion of the workshops, participants were provided with a knowledge test and a satisfaction survey. Participants were also observed to assess their implementation of the routine. Overall all participants rated the workshops favorably. There were no significant differences on the knowledge tests between the posttest scores of both preservice and service teachers attending the workshops, and all participants were observed performing a greater number of target behaviors following training.

Advantages of innovations like those described above by Fisher et al., (1999) and Dinchak (1999) include providing the learner with user control over the what, who, when, and where of their learning. Moreover, new staff have immediate access to required training, users are able to review the program as frequently as desired, and training packages could be easily distributed through mail (or information can be stored and accessed through the Internet) (McGregor et al., 1998; Fisher, Deshler, & Schumaker, 1999). However, research on the use of innovative course delivery methods such as the Internet for educators working in inclusive settings is scant and requires further investigation.

From the above literature review it is clear that two issues arise. First, teachers continue to feel inadequately prepared to teach in inclusive setting; stakeholders of education need to determine priorities in teacher competencies in inclusive settings in order to effectively develop preservice and inservice educational opportunities for teachers. Chapter 2 of this thesis addresses these needs by investigating in greater detail teacher competencies required in inclusive settings. The results of a detailed analysis of a comprehensive survey on inclusive education is presented in order to elucidate topics of high priority for the education of teachers in inclusive settings.

Second, is the need for innovative educational opportunities that meet the learning needs of today's teachers. In Chapter 3, I will review options for the design and delivery of courses delivered via the Internet. The process of building an Internet course will be highlighted. If deemed an appropriate format for presenting information, this course could be used as a model for developing other training packages. The topic for the Internet course, family-centered practices in early intervention, includes topics which parallel many of the items identified in the survey in Chapter 2 under the topic *Collaboration with Families and Professionals.* Selected topics covered by both the course and the survey include Responding to the needs of families, Parent-Teacher Communication, Student-Teacher Communication, Involving Families in Educational Programs, and Accessing Resources to Support Individual Needs. The final chapter summarizes some of the competencies required by teachers working in inclusive settings. This chapter will also suggest some alternative ways of meeting the needs of preservice and service teachers working in these settings.

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CHAPTER 2

Inclusive Education Survey: Meeting the Educational Needs of Preservice Teachers

Abstract

As increasing numbers of students with diverse needs are educated in the regular classroom, researchers report that teachers often feel they lack the skills required to teach students with disabilities in this setting. As the role of teachers evolves to meet the needs of all students in the regular classroom, teacher education must also evolve to meet training needs at the preservice level. Recognizing this fact, the Task Force on Integration (University of Alberta) designed and conducted a survey on preservice programs. The purpose of the survey was to identify important areas to be included in teacher education programs for students in both general and special education in order to better prepare preservice teachers for inclusive education. Rated highest priority by all survey respondents were classroom management, instructional planning, and behavior management. Collaboration was also identified as an item required by 'all teachers'. The inclusion of these program areas into innovation teacher education appears essential.

Introduction

Inclusion

The field of Special Education has undergone tremendous change since the 1960's. We have moved from educating students with exceptional needs in institutions, special schools, and special classes, to educating most children in regular classrooms. The education of students with exceptional needs in the regular classroom, with all of their needs being met in the regular classroom, is known currently as inclusion or inclusive schooling (Porter, 1997; Winzer, 1999).

The definition of terms in inclusion education continues to vary from district to district, and this causes confusion in the pertinent literature, and in the field in general (Guetzloe, 1999; Lupart, 2000). A report on *Integrating Exceptional Students in the Mainstream* (Alberta Education, 1991) includes three definitions which help to clarify terms for educators. In brief, *mainstreaming* is the act of combining the skills of regular and special educators to ensure that all children have equal education opportunities in the least restrictive environment. *Integration* is the process of including students with exceptional needs into the regular school program. *Inclusive schooling* provides education for all students in a regular classroom, regardless of the nature of the student's disability. The difference between an inclusive school and a school that practices mainstreaming or integration, is that "inclusive schools develop accommodating environments for all students, while mainstreaming or integration practices attempt to fit certain students into what currently exists" (Alberta Education, 1991, p. 3).

Teacher Competencies

As increasing numbers of students with diverse needs are educated in the regular classroom, researchers report that teachers often feel they lack the skills required to teach students with disabilities in this setting (Guetzloe, 1999; Hewitt, 1999; Lesar, Benner, Habel, & Colemann, 1997; Minke, Bear, Deiner, & Griffen 1996; Sprague & Pennell, 2000). However, the provision of adequate support for teachers, by providing staff development and availability of resources at both the preservice and service level, is having a positive influence on creating inclusive schools (Dickens-Smith, 1995; Demchak, 1999; Johnson, 1999). In her review, Dickens-Smith (1995) found that the attitudes of regular and special education teachers improved with adequate staff development and support. Smith conducted a study involving 100 special education teachers and 100 regular education teachers to measure the effects of inclusion training on teacher's attitudes towards inclusion. Teachers completed a 12-item survey before and after participating in an inservice training session on inclusion. The results of her study demonstrated that both regular and special education teachers revealed more positive attitudes towards inclusive education following staff development.

In order to determine whether their school board was adequately providing support for the implementation of inclusion of students and equitable learning opportunities, the Calgary Board of Education (CBE) conducted a survey of the Calgary School District #19 (the third largest school system in Canada) (Michaels, 1997). Surveys were sent to 218 principals with a return rate of 130 (60%, results are reliable to within +/- 9.0% at the 95% confidence interval). The results of the survey indicated that, although schools were doing a good job with the limited resources available, there existed a general sense that schools are not providing equitable learning opportunities for students with special needs. Some of the factors hindering equitable learning opportunities included inadequate resource support, large class sizes, the lack of support, demand on teacher's time by students with severe emotional or behavior disorders, and the lack of staff development to increase the range of teaching strategies and strengthen confidence. For example, only 29% percent of teachers who included students with severe disabilities, and only18% of teachers who included students with moderate to mild disabilities, reported that they received professional development for the inclusion of these students into regular classrooms (Michaels, 1997).

In order to obtain a better understanding of the required competencies of educators in an inclusive learning environment, Hamill, Jantzen, and Bargerhuff (1999) distributed 182 surveys to five schools in two of their school districts. Surveys were distributed to general education teachers (75%), special educators (18%) and administrators (2%). The survey required respondents to list competencies they believed teachers and administrators would need in order to achieve success in inclusive schools. Respondents were also required to rate, in terms of highest, medium, or lowest importance, the pre-identified competencies for teachers and administrators. Highly valued competencies for teachers included the ability to be flexible and to adapt instruction for all learners; knowledge of students with disabilities; familiarity with alternative assessments; knowledge of classroom organization and classroom management; ability to address different learning styles; and the ability to promote hands-on learning activities, self-esteem, and developmental curriculum. Similar competencies were identified for administrators, however additional administrator competencies included the ability to communicate with staff, families, and community members; the ability to provide leadership through staff development, staff hiring, vision setting, and funding for inclusion activities. Collaboration was identified at the most important competency for both teachers and administrators. It was concluded that university programs needed to prepare teachers for their collaborative role by providing general and special education students with opportunities to interact and share experiences with each other as well as with other preservice professionals (such as administrators, speech language pathologists, and psychologists). They also recommended that faculty members model inclusive behaviors by co-teaching university courses for general and special education.

Collaboration

Quigney (1998) found that more collaboration, as well as skill-training and practical experience, is needed in preservice teacher training programs. Quigney recommended changing traditional collaborative experiences, where special education topics are embedded into general education course-work, or where general education students are required to take additional special education courses, to a more unified collaborative approach involving personnel preparation. Quigney detailed several examples where universities are providing opportunities for regular and special education students to work together. He cites university programs where special and regular education students are paired together to co-develop and co-teach their lessons during their field experiences. Quigney also points out that an obvious environment for students to observe collaboration is to have it modeled for them by university personnel.

Co-developing and co-teaching was the focus of a study conducted by O'Shea, Williams, and Sattler (1999). The study involved pairing elementary education students (n = 54) who were enrolled in a language arts course, with special education students (n = 49) who were enrolled in a behavioral and learning disabilities course. The students were required to share and problem-solve using case studies of students with disabilities. Evidence of student interactions were obtained from the rate of student e-mail correspondence, as well as through their thematic unit activities (elementary students) and a summary of educational decisions on adapted or modified thematic units (special education students). Preservice teachers reported that as a result of their experiences, they were in a better position to design instruction and adapt activities. They also felt that they were better able to work with others in shared decision-making situations. However, some preservice teachers experienced frustration in working with others and considered themselves to be more effective when working alone.

Innovative Preservice Programs

Other Universities are also developing innovative teacher education programs. For example, in order to foster inclusive beliefs and practices during preservice teacher education, Queen's University Faculty of Education piloted a re-structured teacher education program (Hutchinson & Martin, 1999). The pilot involved 28 elementary teacher candidates beginning their program on a 4-month extended field experience. During these 4 months, the candidates also participated in two courses; one on "Critical Issues" (focusing on equity issues and inclusion of exceptional learners), the other on "Research, Theory, and Professional Practice." A major assignment for the candidates involved writing a case study (or dilemma) about creating an inclusive classroom for one or more exceptional learners. These early extended-field experience successfully created an expectation from each candidate for adapting teaching to meet the individual needs of exceptional learners. The candidates' case studies also portrayed high levels of inclusive beliefs and teaching, as well as critical reflection.

A research university in Detroit Michigan also restructured its course on inclusion to improve preservice education for teachers (Peterson & Beloin, 1998). They rejected a curriculum which featured "a disability a week" and adopted a curriculum which provides the foundations of inclusion, utilized videos of successful inclusive schooling, invited presentations from parents and individuals with disabilities, and allowed opportunities for student to practice and discuss "designing instruction for diversity." In a similar venture, the University of Wisconsin-Stevens rejected mainstreaming courses and textbooks which focused on categorical disabilities, for materials focusing on curricular accommodations, peer supported instruction, strategies for developing effective Individual Education Plans, and strategies for including parents as partners in the educational process (Peterson & Beloin, 1998). These ventures were strong preliminary steps in improving teacher preparation programs.

In a study by Sprague and Pennell (2000), the faculty and school personnel designed a university course around an inclusive middle school program. Preservice education students observed inclusive classrooms demonstrating collaborative teaching. Special and regular teachers also had the opportunity to present to the students strategies for planning and co-teaching, ideas for adapting instruction, and materials for students with special needs. Prior to taking the course, less than 50% of the students felt competent in co-planning and co-teaching with special educators. This percentage increased to 100% by the end of the course, demonstrating that collaborative relationships between university and school personal can lead to successful innovative preservice education models.

Sobel, French, and Filbin (1998) also implemented an innovative preservice program involving a partnership between the school district and university. Their program immersed students early in their educational program into a year-long internship at an urban school. The urban school provided students with the opportunity to work with and observe teachers working with students from various cultural and socio-economic backgrounds, and with various learning abilities. These students participated simultaneously in coursework and fieldwork (25 hours per week) in multidisciplinary settings where they received feedback from a mentor teacher and a university supervisor. Results showed that the model is working well for both novice teachers and the school and university communities. The added resource of interns is enabling schools to improve their services to students with special needs. Teachers reported that the regular visits from university supervisors encouraged them to implement 'best practices' from the field. Furthermore, university supervisors also found that their first-hand knowledge of student experiences enabled them to provide more meaningful course lectures.

From this review above, it is clear that as the roles of teachers evolve to meet the needs of all students in the regular classroom, teacher education must also evolve to meet training needs at the preservice level. Recognizing this fact, the Task Force on Integration (University of Alberta) designed and conducted a survey on preservice programs. The purpose of the survey was to identify important areas to be included in teacher education program for students in both general and special education in order to prepare preservice teachers for inclusive education. A detailed description of the survey and pertinent findings are detailed here.

Method

Task Force on Integration

In order to ensure that teachers and student teachers were being provided with a teacher education program that prepares teachers to teach all students, including students with learning and behavioral challenges, a Canadian university formed a Task Force on Inclusive Education. Members of the Task Force included representatives from two school boards, the provincial teachers' association, undergraduate and graduate student associations, a local advocacy group, and representatives from all departments in the Faculty of Education, University of Alberta. The task force developed and distributed a survey on the topic of teacher preparation to a variety of stakeholders (see Appendix A).

Survey

The survey was developed by Task Force members in consultation with academics in the Faculty of Education and community representatives. Content areas that are being covered currently (or should be covered in the teacher education program) were identified by representatives from each department in the Faculty of Education. The content areas were organized into 10 clusters (see Table 2.1). Cluster 1, Foundations of Inclusive Education, included the ethical foundations of inclusion, attitudes towards inclusion, and the history of special and inclusive education. Cluster 2, Screening Children to Identify Special Needs, included content items that would enable educators to identify various signs of exceptional needs (e.g., signs of hearing impairment, learning disabilities, substance abuse, etc.), and when to refer students for further evaluation. Cluster 3, Individualized Assessment, covered the interpretation and use of various tests and assessments. Cluster 4, Instructional Planning, focused on the development of Individual Education Plan and goals and objectives. Cluster 5,

Table 2.1.

Clusters in the Inclusive Education Survey and Content Items.

Cluster	Content Items
1. Foundations of Inclusive Education	Philosophical & Ethical Foundations • Research on Inclusion • Social Foundations of Inclusion • Attitudes Toward Inclusion • History of Special & Inclusive Education
2 & 8 Screening Children to Identify Special Needs & Knowledge about Exceptional Students	Hearing Impairment • Giftedness & Special Talents • Visual, Language , Cognitive, Chronic Health, & Mobility Impairments • Learning Disabilities • Culturally Diverse Backgrounds • Social, Emotional, or Behavioral Difficulties • Multiple Disabilities • Family Violence • Substance Abuse • Psychological Evaluation & Interpretation • Referring Students for Evaluation
3. Individualized Assessment	Limits of Standardized Testing • Adapting Assessments to Individual Differences • Natural Observation • Performance-Based Testing/Criterion-Referenced • Testing Validity for Child's Social Context • Transitionally-Based Assessment • Understanding Test Results • Using Criteria to Guide Decisions • Measuring and Reporting Student Progress • Norm Referenced (Standardized) Assessment
4. Instructional Planning	Individualized Educational Programs • Planning for Educational Transitions • Developing Goals and Objectives • Determining Criteria • Community-Referenced Curriculum • Curriculum-Based Instruction • Instructional Design
5. Instructional Delivery to Diverse Students	Mixed-Group Instruction • Cooperative Learning • Peer Tutoring • Community-Based Instruction • Problem Solving • School-wide Assistance Teams • Curriculum Overlapping • Parallel Learning • Multilevel Instruction • Cognitive Strategies and Learning Styles • Whole Language Instruction
6. Classroom Management	Proactive Classroom Management • Crisis Management • Planning and Scheduling Strategies • Theories and Techniques of Classroom Management • Adapting Curriculum to Multiple Levels of Classroom Management • Implementing Organizational Strategies • Grouping Strategies • Managing Transitions • Questioning Strategies • Facilitating Inclusion
7. Behavior Management	Motivating Students • Reducing Behavior • When to Request Help • Nonviolent Self-Defense • Conflict and Anger Management • Applied Behavior Analysis • Student Self-Management Strategies • Communicating Expectations • Behavior Contracting
9. Collaboration with Families and Professionals	Parent-Teacher Communication • Student-Teacher Communication • Involving Families in Educational Programs • Responding to the Needs of Families • Transdisciplinary Teamwork: Models and Applications • Working with Others (e.g., Teacher Assistants, Consultants, Teachers) • Accessing Resources to Support Individual Needs
10. Health Care Issues in the School	Epilepsy • Cerebral Palsy • Airway Obstruction Prevention and Treatment • Medications Commonly Used with School Children • Hearing Aid Maintenance • Asthma • Classroom Emergencies • Health-Care Teams • Oral Feeding • Toileting Procedures • Urinary Catheterization

Instructional Delivery to Diverse Students, listed various teaching strategies used in inclusive settings (e.g., mixed-group instructions, peer tutoring, parallel learning, and curriculum overlapping). Clusters 6 and 7 dealt with issues on classroom management and behavior management (e.g., planning, organizational strategies, motivating students, and anger management). Cluster 8, Knowledge about Exceptional Students, dealt with the common characteristics and teaching strategies associated with various exceptionalities (e.g., students with learning disabilities, students from culturally diverse backgrounds, and student with cognitive impairments). The final two clusters, 9 and 10, dealt with collaboration with families and professionals, and health care issues. Space was also provided within each cluster for participants to provide additional content items, and a blank cluster was provided at the end of the survey for participants to include additional topics that were not covered by the 10 clusters in the survey.

In Part A, respondents were requested to identify *who* (N- no one, A- all student teachers, C – specialist consultants (Special Education Minors) or S – student's option/elective) should receive instruction for each of the 10 clusters listed above. Respondents were also requested to rank each cluster in terms of the importance of the topic for preparation for all teachers relative to the other cluster areas (e.g., first, second, third, etc.). In Part B, the 10 clusters were broken down into specific content items (ranging from 5 to 13 content items per cluster). Respondents were asked to again identify *who* should receive instruction for each content item. Respondents were also asked to rank each item within a cluster in order of importance.

Participants

Surveys were distributed to families who had a child with a disability, undergraduate and graduate students in the Faculty of Education, and full-time academics in the Faculty of Education. One hundred and fifty parent-surveys were distributed to families by local parent-advocacy groups. These surveys were returned by mail to the Chair of the Task Force. A total of 500 surveys were also distributed to a convenience sample of undergraduate students. One hundred and fifty surveys were distributed during a weekly callback seminar to fourth year undergraduate students who were out on field experiences and had completed most of their course work. The remaining surveys were available to the generalist and special education student associations to be distributed to interested students during classes, in coffee areas, general meeting areas, etc. Academic (n = 143) and graduate student surveys (n = 151) were distributed through campus mail. Student and academic surveys were returned to the Chair of the Task Force via campus mail.

Surveys were also distributed to 966 schools. Each school received three copies of the survey (n = 2898). Principals were requested to complete one survey and distribute the remaining two surveys to interested teachers. School surveys for the four largest districts in the region were delivered to their main offices and delivered through each district's mail delivery systems; other school surveys were delivered by mail. All completed surveys were returned by mail to the Chair of the Task Force.

Survey Return Rate

A breakdown of the number of surveys distributed to each group, the return rate, and the percentage of returned surveys can be found in Table 2.2. The largest number of returned surveys were from educators (73% of the total number of surveys), the second largest number of contributors came from undergraduate students (19% of the total number of surveys). It is difficult to determine the actual number of surveys that were distributed to parents, because some organizations made copies and distributed them to families, others did not. The results of surveys completed by undergraduate, teachers and principals, as well as full-time academics in the Faculty of Education are presented below. Because the return rates of graduate students (n = 17) and families were low (n = 25), their responses are not included in this report but can be found in the final report from the Task Force on Integration (McDonald, MacPherson-Court, Sobsey, and Rousseau, 1997).

Table 2.2.

Survey Return Rate

Group	Number Distributed	Number Returned	Return Rate	Percentage of Returned Surveys
Undergraduate Students	500	199	40%	19%
Graduate Students	151	17	11%	2%
Academics	143	39	27%	4%
Parents	150*	25	N/A	≈2%
Educators	2892	752	26%	73%
Total	3836	1032	27%	100%

Data Analysis

To begin the analysis, frequency data (i.e., numbers and percentages) were reported for each item within the clusters of the survey (n=103). A Chi-square/Contingency Table was used to determine whether there were differences in frequency ratings between educators and undergraduate students. Cramer's V Test was used to interpret differences in frequency ratings between groups; a value of 0 indicated no difference, and a value of 1 indicated a relationship between respondent group and rating. Each cell item was also analyzed to determine if differences existed at $p \leq .01$ (±2.58) levels. Because of the large sample size, differences at the at $p \leq .05$ (±1.96) were excluded.

The priority rankings of items within each cluster were compared using the Friedmann Two-Way Analysis of Variance. This test provided both the mean rank and sum of ranks for each item in the survey. A low mean rank indicated that the cluster was given higher priority over other clusters. For example, if all respondents ranked an item as 1, it would receive a perfect mean ranking of 1. Thus, an item in any cluster that received the lowest mean ranking, was ranked first. The closer a mean ranking was to the perfect mean ranking of 1, the greater its priority in comparison to other mean rankings for its cluster. More items in a cluster made higher mean rankings possible. A Friedman Test was also used to determine the significance of rankings. It compares differences in mean rankings to the variability in ranks given by different respondents. Low probability levels for the Friedman tests indicate a high degree of agreement in rankings among respondents.

Reliability

Reliability was computed on data entry for 10% of the returned surveys. Surveys were selected for reliability checks using a random numbers table, this selection process was repeated for each group of respondents (i.e., educators, academics, undergraduate students, graduate students, and parents). Inter-rater reliability was computed at 99.8%. High reliability was expected because of the large sample size and the database design. During the design of the database, boundaries were set for most variables (e.g., group numbers, yes/no, gender) and if a mistake occurred the computer responded with an error message.

Results

Demographic Data

Educators. The largest percentage of returned surveys was from regular elementary teachers (34%) or principals (29%). Most worked in medium-sized schools of 200 - 399 students (40%), or in large schools of 400 or more students (32%). These schools were located in either a city of more than 30,000 people (45%) or in a suburban/rural setting of less than 10,000 people (44%). Seventy-two percent of the teachers indicated that they had more than 10 years of teaching experience and 50% had more than 3 years experience in inclusive school settings. Most principals (69%) indicated that they had more than 3 years experience in inclusive school settings.

Undergraduate students. Surveys were completed primarily by female students (83%) between the ages of 18 and 25 (71%). Most students were completing a Bachelor of Education Degree (93%) and were in their fourth year of the program (86%). Seventy-two percent of these students were in the Elementary Education Route, and 20% were completing a focus area in Special Education. Twenty-four percent of the students were in the Secondary Education Route with 4% taking a Minor in Special Education. Eighty-nine percent of the students had completed or were in the process of completing their field experience.

Faculty members. Academics completing the survey included Professors (56.3%), Associate Professors (31.3%), Lecturers (9.4%) and other (3%). Surveys were returned from each of the four departments in the Faculty of Education (Educational Policy Studies, Educational Psychology, Elementary Education, and Secondary Education). Almost half of the surveys (42%) were returned from the Department of Educational Psychology, where the Special Education area is housed. Most respondents (67%) reported more than 10 years of experience in the Faculty of Education, were not members of the special education focus area (76%), and had not taught special education courses (67%).

Survey Results

Part A - survey clusters. Educators, faculty members, and undergraduate students were fairly consistent in their responses on the survey. The three clusters ranked as most important by these respondents were: Classroom Management (mean rank - 2.4), Instructional Planning (mean rank - 3.1), and Behavior Management (mean rank - 3.6) (see Table 2.3). The cluster receiving the highest mean rank (or lowest relative priority) was Health Care Issues in Schools (mean rank -9.0). Slight variations in rankings were observed between groups. Respondents all selected the same top four clusters (Classroom Management, Instructional Planning, Behavior Management, and Instructional Delivery); however, the order of importance varied across groups (see Table 2.3). All rankings reported in this survey were significant at the $P \leq .0001$ level. It should be noted that many respondents indicated that all clusters (and items within a category) were of equal importance and gave each item a rank-order value of 1. These data were excluded in the analysis and (along with incomplete surveys) accounted for the differing "n" in Tables 2.3 and 2.4.

Table 2.3 lists the training clusters in order of importance, whereas Table 2.4 identifies who should receive training for each cluster (i.e., all teachers, specialist consultant, student option, or no one). The majority of respondents also indicated that 'all teachers' should receive training in each cluster of the survey. The percentage of respondents choosing 'all teachers' ranged from 54% (Health Care Issues in the School) to 99.4% (Classroom Management) (see Table 2.4). Differences in ratings by group were very small (Cramer's V ranged from .07 to .23). In the cluster "Behavior Management", differences between educators and faculty existed at the $p \leq .01 (\pm 2.58)$ level. In contrast to faculty respondents, significantly more educators (98% vs. 73.7%) felt that "all teachers" should receive training in Behavior Management Strategies. More

Table 2.3.

Friedman Mean Rank Data for Part A. Respondent's Rating of Training Clusters.

CLUSTERS	**Total Survey** n=573 $p \leq .0001$	**Educators** n=413 $p \leq .0001$	**Students** n=116 $p \leq .0001$	**Faculty** n=18 $p \leq .0001$
Classroom Management	**2.36**	**2.34**	**2.11**	3.18
Instructional Planning	3.11	2.86	4.00	**3.12**
Behavior Management	3.59	3.58	3.06	4.74
Instructional Delivery	4.55	4.56	4.9	4.03
Individualized Assessment	5.82	5.70	5.82	6.16
Screening for Special Needs	6.11	6.07	6.16	5.58
Knowledge about Exceptional Students	6.22	6.32	6.03	5.74
Collaboration	7.02	7.09	6.87	7.53
Foundations of Inclusive Education	7.24	7.45	7.07	6.79
Health Care Issues in the School	8.99	9.02	8.98	8.16

Table 2.4.

Summary of Frequency Data for Part A. 'Who' Should Receive Training

Clusters (Topics)	**Total Survey n = 1032**	**Educators n = 752**	**Students n = 199**	**Faculty n = 39**
Foundations of	N 2.5%	N 2.8%	N 1.6%	N 5.3%
Inclusion	**A 74.1%**	**A 72.4%**	**A 79.0%**	**A 73.7%**
Cramer's V:	C 9.7%	C 9.9%	C 8.4%	C 13.1%
.07	S 13.6%	S 15.0%	S 11.1%	S 7.9%
Screening for	N 0.7%	N 0.5%	N 0.0%	N 2.6%
Special Needs	**A 51.1%**	**A 49.8%**	**A 58.9%**	**A 50.0%**
Cramer's V:	C 43.9%	C 45.6%	C 36.0%	C 42.1%
.12	S 4.3%	S 4.1%	S 5.1%	S 5.3%
Individualized	N 0.3%	N 0.1%	N 0.0%	N 0.0%
Assessment	**A 55.2%**	**A 55.3%**	**A 59.6%**	**A 46.0%**
Cramer's V:	C 38.0%	C 39.4%	C 30.1%	**C 46.0%**
.15	S 6.4%	S 5.3%	S 10.4%	S 8.1%
Instructional	N 0.1%	N 0.1%	N 0.0%	N 0.0%
Planning	**A 96.5%**	**A 97.3%**	**A 95.4%**	**A 92.1%**
Cramer's V:	C 1.9%	C 1.8%	C 1.6%	C 5.3%
.09	S 1.5%	S 0.8%	S 3.1%	S 2.6%
Instructional	N 0.1%	N 0.0%	N 0.0%	N 2.6%
Delivery	**A 87.7%**	**A 87.3%**	**A 88.2%**	**A 92.1%**
Cramer's V:	C 7.6%	C 8.1%	C 7.2%	C 2.6%
.12	S 4.5%	S 4.6%	S 4.6%	S 2.6%
Classroom	N 0.0%	N 0.0%	N 0.0%	N 0.0%
Management	**A 99.4%**	**A 99.6%**	**A 99.0%**	**A 100%**
Cramer's V:	C 0.1%	C 0.1%	C 0.0%	C 0.0%
.08	S 0.5%	S 0.3%	S 1.0%	S 0.0%
Behavior	N 0.2%	N 0.0%	N 0.0%	N 5.3%
Management	**A 96.4%**	**A 98.0%****	**A 96.5%**	**A 73.7%****
Cramer's V:	C 2.0%	C 1.1%**	C 1.5%	C 18.4%**
.23	S 1.5%	S 0.9%	S 2.0%	S 2.6%
Knowledge of	N 0.3%	N 0.3%	N 0, 0%	N 2.70%
Exceptionalities	**A 75.6%**	**A 75.1%**	**A 75.6%**	**A 78.4%**
Cramer's V:	C 14.0%	C 13.7%	C 14.2%	C 18.9%
.08	S 10.1%	S 10.9%	S 10.2%	S 0.0%
Collaboration	N 0.7%	N 0.8%	N 0, 0%	N 2.6%
Cramer's V:	**A 73.0%**	**A 71.8%**	**A 76.1%**	**A 71.1%**
.07	C 15.4%	C 16.6%	C 11.2%	C 18.4%
	S 10.9%	S 10.9%	S 12.7%	S 7.9%
Health Care	N 3.0%	N 3.0%	N 2.0%	N 8.3%
Issues	**A 54.3%**	**A 53.4%**	**A 55.6%**	**A 58.3%**
Cramer's V:	C 16.1%	C 16.1%	C 14.3%	C 22.2%
.07	S 26.6%	S 27.5%	S 28.1%	S 11.1%

Note. N = No One, A = All Teachers (required for B. Ed.), C = Specialist Consultants (Required for Special Ed Majors), and S = Student's option (Elective).
**$p \leq .01$

Part B - analysis of items within each cluster. In part B of the survey, respondents were asked to determine "who" should receive instruction on various items within each cluster. Table 2.5 lists the items within each cluster where 75% or more respondents indicated that 'all teachers' should receive training. Because of the large percentage of respondents selecting "all teachers", these items may be considered items of high instructional priority for teacher-education programs. Cluster 1, Foundations of Inclusive Education, is the only cluster in which respondents did not select any item as high instructional priority for "all teachers". Items of medium instructional priority, where 50 to 75% of the respondents indicated that "all teachers" should receive training, can be found in Table 2.6. Items of low instructional priority, where less than 50% of the respondents indicated that "all teachers" should receive training, can be found in Table 2.7. Tables displaying frequency data and rank data for each cluster by group (educators, undergraduate students, graduate student, parents and faculty) are available in the final report of the Task Force on Integration (McDonald et al, 1997). The following sections are a summary of the results of each cluster of the survey. The clusters are presented in order of ranked importance from survey respondents. Although comments were not solicited, some respondents provided written comments. These comments are included here, where appropriate.

1. Classroom Management, Cluster 6. Classroom Management was ranked first out of the 10 clusters in the survey by both educators (mean rank 2.3) and undergraduates (mean rank 2.1). Faculty members ranked this cluster second (mean rank 3.2), selecting Instructional Planning as first (mean rank, 3.2). The top three items of priority in this cluster were Proactive Classroom Management (mean rank - 2.3), Theories and Techniques of Classroom Management (mean rank - 4.2), and Planning and Scheduling Strategies (mean rank - 4.9). The item receiving the highest mean ranking or lowest priority was Facilitating Inclusion Among Students (mean rank - 7.1). Nine of the 10 items in this cluster were also identified as high priority items for teacher education programs. The percentage of

Table 2.5.

Items of High Instructional Priority for All Teachers.

Cluster	High Priority Items
1. Foundations of Inclusive Education	• No items selected
2. Screening children to Identify Special Needs	• Family Violence (85%) • Emotional or Behavior Adjustment (84%) • Learning Disability (83%) • Substance Abuse (79%)
3. Individualized Assessment	• Measuring & Reporting Student Progress (94%) • Natural Observation (82%) • Interpreting Test Results (79%) • Using Criteria to Guide Decisions (78%)
4. Instructional Planning	• Developing Goals & Objectives (93%) • Curriculum-Based Instruction (92%) • Instructional Design (77%) • Individualized Educational Programs (76%)
5. Instructional Delivery to Diverse Students	• Problem Solving (93%) • Mixed-Group Instruction (91%) • Cognitive Strategies/ Learning Styles (90%) • Cooperative Learning (89%) • Multi-Level Instruction (82%) • Curriculum Overlapping (77%)
6. Classroom Management	• Proactive Classroom Management (97%) • Questioning Strategies (91%) • Theories of Classroom Management (90%) • Adapting Curriculum to Multiple Levels (83%) • Organizational Strategies (81%) • Facilitating Inclusion Among Students (80%) • Planning/Scheduling Strategies (80%) • Grouping Strategies (79%) • Managing Transitions (75%)
7. Behavior Management	• Motivating Students (97%) • Reducing Behavior (95%) • Communicating Expectations (92%) • When to Request Help (84%) • Conflict & Anger Management (78%)
8. Knowledge about Exceptional Students	• Learning Disabilities (76%)
9. Collaboration	• Parent-Teacher Communication (97%) • Student-Teacher Communication (96%) • Working with Others (82%)
10. Health Care Issues	• Classroom Emergencies (90%)

Note. Items considered high instructional priority included those items where 75% or more of the respondents selected the topic as a training requirement for 'all teachers'.

Table 2.6.

Items of Medium Instructional Priority for All Teachers.

Cluster	Medium Priority Items
1. Foundations of Inclusive Education	• Philosophical & Ethical Foundations (57%) • Attitudes Towards Inclusion (63%)
2. Screening children to Identify Special Needs	• Cognitive Impairment (74%) • Giftedness & Special Talents (72%) • Language Impairment (72%) • Referring Students for Further Evaluation (69%) • Visual Impairment (65%) • Hearing Impairment (64%) • Multiple Disability (53%)
3. Individualized Assessment	• Limits of Standardized Testing (63%) • Adapting Assessments (64%) • Performance-Based Testing (63%) • Norm-Referenced Standardized Assessment (58%)
4. Instructional Planning	• Determining Criteria (73%) • Planning for Educational Transitions (59%)
5. Instructional Delivery to Diverse Students	• Peer Tutoring (73%) • Whole Language Instruction (73%) • Parallel Learning (62%) • School-Wide Assistance Teams (52%)
6. Classroom Management	• Crisis Management (73%)
7. Behavior Management	• Student Self-Management Strategies (72%) • Behavior Contracting (69%) • Nonviolent Self-Defense (58%)
8. Knowledge about Exceptional Students	• Attention Deficit Disorder (74%) • Behavioral/Emotional Impairments (68%) • Special Gifts & Talents (67%) • Culturally Diverse Backgrounds (67%) • Cognitive Impairments(60%)
9. Collaboration	• Involving Families (70%) • Accessing Resources to Support Individual Needs (66%) • Responding to the Needs of Families (51%)
10. Health Care Issues	• Medications Commonly Used by School Children (63%) • Asthma (59%) • Airway Obstruction (52%)

Note. Items considered medium instructional priority included those items where 50 to 75% of the respondents selected the topic as a training requirement for 'all teachers'.

Table 2.7.

Items of Low Instructional Priority for All Teachers.

Cluster	Instructional Priority Items for Specialist Teachers
1. Foundations of Inclusive Education	• Research on Inclusion (39%) • Social Foundations of Inclusion (43%) • History of Special & Inclusive Education (32%)
2. Screening children to Identify Special Needs	• Psychological Evaluation & Interpretation (22%)
3. Individualized Assessment	• Transitionally-Based Assessment (36%) • Testing Validity for Child's Social Context (30%)
4. Instructional Planning	• Community-Referenced Curriculum (46%)
5. Instructional Delivery to Diverse Students	• Community-Based Instruction (45%)
6. Classroom Management	• Applied Behavior Analysis (43%)
7. Behavior Management	•
8. Knowledge about Exceptional Students	• Speech Impairments (50%) • Visual Impairments (43%) • Hearing Impairments (43%) • Mobility Impairments (39%) • Chronic Health Impairments (38%)
9. Collaboration	• Trandisciplinary Teamwork (44%)
10. Health Care Issues	• Oral Feeding (47%) • Working with Health Care Teams (42%) • Epilepsy (38%) • Cerebral Palsy (28%) • Hearing Aid Maintenance (16%) • Toileting Procedures (9%) • Urinary Catheterization (7%)

Note. Items considered low instructional priority included those items where 50% of the respondents or less selected the topic as a training requirement for 'all teachers'.

respondents choosing "all teachers" ranged from 72% (Crisis Management) to 97% (Proactive Classroom Management). Not surprisingly, many of the comments included in this section of the survey indicated that all items in this cluster were very important and necessary to successful teaching.

2. Instructional Planning, Cluster 4. As a cluster, Instructional Planning was ranked first by faculty members (mean rank - 3.1), second by educators (mean rank - 2.9), and third by undergraduates (mean rank - 4.0). Many respondents had difficulty ranking the items within the cluster, indicating that items were of equal levels of importance. However, the top three items of priority in this cluster were: Developing Goals and Objectives (mean rank - 2.1), Curriculum-Based Assessment (mean rank - 3.3), and Individualized Educational Programs (mean rank - 3.6). The item of lowest priority was Community-Referenced Curriculum (mean rank - 5.8). Again, rankings were consistent across groups. The majority of respondents also indicated that all items within this cluster were important for "all teachers", ranging from 44% (Community-Referenced Curriculum) to 95% (Developing Goals and Objectives). Several comments by respondents indicated that more of this content area (and practice teaching sessions) in general education programs would go a long way in preparing teachers for the classroom. In contrast, some respondents also felt that these strategies should be minimized in favor of regular classroom strategies that address a 'wide range of needs'.

3. Behavior Management (Cluster 7). In the overall ranking of clusters, Behavior Management was ranked third by educators (mean rank 3.6), second by undergraduates (mean rank 3.1), and fourth by faculty members (mean rank 4.7). Many educators found it difficult to rank items within this cluster. For example, one teacher stated that several items were "very important in all classrooms." The top three items of priority in this cluster were: Motivating Students (mean rank - 1.9), Reducing Problem Behavior (mean rank - 3.1), and Communicating Expectations (mean rank - 3.9). The item ranking lowest priority (or highest rank) was Non-violent Self-Defense (mean rank - 7.3). All groups were consistent

in their rankings. The percentage of respondents choosing "all teachers" ranged from 43% (Applied Behavior Analysis) to 97% (Motivating Students). Items not included in this cluster, but added by survey respondents in the "other" section at the end of each cluster, included: Building Student Self-Esteem, Proactive Behavior Management Strategies, Involving Parents, and Managing Stress.

4. Instructional Delivery to Diverse Students, Cluster 5. The cluster 'Instructional Delivery to Diverse Students' was ranked fourth by educators (mean rank – 4.6) and students (mean rank – 4.9), and third by faculty members (mean rank - 4.0). The top three items of priority in this cluster were Mixed Group Instruction (mean rank - 3.9), Cognitive Strategies and Learning Styles (mean rank - 4.1), and Problem Solving (mean rank - 4.1). However, the difference between the top five ranks was only 1.08, making all five items (Mixed Group Instruction, Cognitive Strategies and Learning Styles, Problem Solving, Cooperative Learning, and Multilevel Instruction) very close in order of importance. The percentage of respondents choosing "all teachers" ranged from 45% (Community-Based Instruction) to 91% (Problem Solving).

Comments provided by survey respondents also supported teaching the strategies to "all teachers". Students called for the need to learn about these strategies and to have the opportunity to practice them: "Experience in a real classroom is important. I think 12 weeks of field experience is not long enough." Another student spoke of the importance of "having opportunities to use our theory within a 'real' classroom setting. We need more practical experiences!" A third student wrote, "We should be given more techniques of teaching. Give us something practical to use in the classroom." A teacher also wrote of the importance of not only adapting curricula, but being familiar with curricula: "Courses must be presented on the interpretation and full comprehension of curricular documents, paralleled with actual preparation of units and lessons using these documents mandatory!" A second teacher pointed out the value of these skills for all teachers: "As more and more special needs students are in regular classrooms, teachers must have the skills, attitudes, and knowledge to deal with the realities of a inclusive classroom."

5. Individualized Assessment, Cluster 3. As a cluster, Individualized Assessment was ranked fifth by both educators (mean rank -5.7) and undergraduates (mean rank – 5.8), but seventh by faculty members (mean rank 6.2). The top three items of priority in this cluster were Measuring and Reporting Student Progress (mean rank - 3.4), Understanding Test Results (mean rank - 4.1), and Natural Observation (mean rank - 4.3). Items ranked second (Understanding Test Results), third (Natural Observation), fourth (Adapting Assessments), and fifth (Using Criteria to Guide Decisions) all received rankings between four and five (mean rank difference - .76), making these items very close in terms of importance. Educators and undergraduates ranked Measuring and Reporting Student Progress first (mean rank – 3.2 and 3.7 respectively). However, faculty members ranked Natural Observation first (mean rank – 3.4) and Limits of Standardized Testing second (mean rank – 3.8). All three groups ranked Transitionally-Based Assessment last. Eight out of 10 items in this cluster were viewed as important areas of preparation for "all teachers" with percentages ranging from 30% (Testing Validity for Child's Social Context) to 94% (Measuring and Reporting Student Progress). Educators' comments included the request for more course work in the area of assessment. One educator pointed out that there is "increased stress on assessment all of the time". Another commented that "teachers should know how to spot "high profile" children. In the "other" section, respondents also suggested that the following items be added to this cluster: Portfolio assessment, anecdotal recording, interpreting test results for others, and record keeping.

6. Screening Children to Identify Special Needs, Cluster 2. The top three items of priority in this cluster were Signs of Learning Disabilities (mean rank - 3.2), Signs of Social, Emotional, or Behavioral Adjustment (mean rank - 3.5), and Signs of Cognitive Impairment (mean rank - 4.9). Items ranked sixth (Signs of Visual Impairment), seventh (Signs of Hearing Impairment), eighth (Signs of Giftedness and Special Talents) and ninth

(Signs of Substance Abuse) all received mean ranks between 7 and 8 with a mean difference of only 0.4, making these items very close in order of importance. Educators, undergraduates and faculty members were all fairly consistent in their rankings. These three groups were also in agreement that "all teachers" should receive training on 11 of the 12 cluster items and that the most important items were Signs of Family Violence, Signs of Emotional or Behavioral Adjustment, and Signs of Learning Disability. All three groups felt that Psychological Evaluation and Interpretation was a more appropriate role for Specialist Consultant (or required for Special Education Majors).

Many respondents also indicated that these cluster items were again particularly difficult to rank. As one teacher indicated, "These are all of equal importance - impossible to rank." Another teacher wrote: "I think it is important for all classroom teachers to be prepped for signs of problems in children so that they can be referred to specialists for accurate and detailed screening."

7. Knowledge about Exceptional Students, Cluster 8. Knowledge about Exceptional Students was ranked seventh by educators (mean rank – 6.3), and sixth by both undergraduates (mean rank – 6.3) and faculty members (mean rank – 5.7). The top three items of priority in this cluster were: Students with Learning Disabilities (mean rank - 2.61), Students with Attention Deficit Disorders (mean rank - 3.73), and Students with Cognitive Impairments (mean rank - 4.15). Items ranked fifth (Students with Speech and Language Impairments), sixth (Students with Special Gifts and Talents), seventh (Students from Culturally Diverse Backgrounds), and eighth (Students with Visual Impairments) all received mean ranks between 6 and 7 (mean rank difference = .88), making these items very close in terms of importance. Rankings were fairly consistent across groups. Most items within this cluster were also identified as important for "all teachers". However, their percentages were lower than the above clusters resulting in several items being classified as either "medium instructional priority" or "low instructional priority" (see Tables 2.6 and 2.7).

As with the cluster "Screening Children to Identify Special Needs", survey respondents indicated relative difficulty ranking items within the cluster. One educator wrote, "I don't believe this can be rank ordered. Students need an overview of all. They will learn more when they have these students in their room." Another educator commented that "These (students) are included in regular classrooms and classroom teachers must be able to manage." A third educator wrote, "I believe these to be very important to all teachers. To rank them would be therefore difficult. Teachers need the tools to develop strategies for students with a variety of skills and abilities." A undergraduate respondent concurred: "If these students are all integrated, training should be given to help the teacher with solutions to of all these potential problems."

8. Collaboration, Cluster 9. Collaboration was ranked eighth by educators (mean rank – 7.1) and undergraduates (mean rank 6.9) and ninth by faculty members (mean rank – 7.5). The top three items of priority in this cluster were: Student-Teacher Communication (mean rank - 1.88), Parent-Teacher Communication (mean rank - 2.44), and Working with Others (mean rank - 3.92). Rankings were fairly consistent across groups. Items in this cluster were also seen as important for "all teachers". The percentage of respondents choosing "all teachers" ranged from 44% (Transdisciplinary Teamwork) to 97% (Parent-Teacher Communication). However, there were significant differences between educator and undergraduate responses. Educators selected 'specialist consultants' significantly more often ($p \leq .01$) than undergraduates on four items (Involving Families in Education Programs, Responding to the Needs of Families, Transdisciplinary Teamwork, and Accessing Resources to Support Individuals).

One educator commented that skills in this area are best achieved through 'on-the-job training'. However, on-the-job training without adequate supports can be difficult. Another educator also commented that she found 'working with others' very difficult when she first started teaching in special education. Several educators recommended more "networking between schools" to enhance support. Several educators also recommended that courses on collaboration include lists of "outside resources" as well as a section dedicated to "community involvement in education". One educator also commented that "interagency collaboration should be illustrated (modeled) at both university and community levels".

9. Foundation of Inclusive Education, Cluster 1. Foundations of Inclusive Education was ranked ninth by educators (mean rank - 7.5) and undergraduates (mean rank - 7.1), and eighth by faculty members (mean rank - 6.8). The first four items of priority in this cluster were closely ranked: Attitudes Toward Inclusion (mean rank - 2.45), Philosophical and Ethical Foundations (mean rank - 2.72), Research on Inclusion (mean rank - 2.91), and Social Foundations of Inclusion (mean rank - 2.92). However, there was only one half of a rank (.47) between the first and fourth item, making the first four items very close in terms of importance. Although respondents rated the 'all teachers' category highest in four out of five items, percentages in this category tended to be lower than other cluster items in the survey. Only two items, Attitudes Towards Inclusion (62.9%) and Philosophical and Ethical Foundations (57.0%) were recommended as training for all teachers by more than half the respondents. There were substantial group differences for the items Research on Inclusion and History of Special and Inclusive Education. In contrast to undergraduate responses, significantly more educators saw 'Research on Inclusion' as an important item for "all teachers" ($p \leq .01$). In addition, significantly fewer educators than undergraduates selected the History of Special and Inclusive Education as an important training item for consultants.

10. Health Care Issues in the School, Cluster 10. Health Care Issues in the School was ranked last by educators (mean rank – 9.0), undergraduates (mean rank – 9.0) and faculty members (mean rank – 9.0). The top three items of priority in this cluster were Classroom Emergencies (mean rank 1.6), Medications Commonly used with School Children (mean rank - 3.2), and Students with Asthma (mean rank – 4.0). The items receiving lowest priority (or high ranks) were Assistance with Oral Feeding (mean rank - 8.8), Toileting Procedures (mean rank - 9.4), and Urinary Catheterization (mean rank -

10.5). Rankings were consistent across all groups. Relatively fewer items in this cluster were identified as important for "all teachers". The percentage of respondents choosing "all teachers" ranged from 7% (Urinary Catheterization) to 90% (Classroom Emergencies). Only four of the 11 items were selected for "all teachers" by more than 50% of respondents. These included Classroom Emergencies, Medications Commonly Used in the Schools, Students with Asthma, and Airway Obstruction. Five of the 11 items were identified as important areas of preparation for specialist consultants. The percentage of respondents choosing specialist consultants ranged from 43 % (Hearing Aid Maintenance) to 47% (Assistance with Oral Feeding).

There were statistical differences between educators and undergraduates in this cluster. In seven out of 11 items, undergraduates chose 'all teachers' proportionately more often than educators ($p \leq .01$). Educators also selected 'no one' significantly more often than undergraduates ($p \leq .01$) on four items (Hearing Aid Maintenance, Assistance with Oral Feeding, Toileting Procedures, and Urinary Catheterization).

This cluster generated many comments from survey respondents. Several respondents commented that many health care issues should be addressed at the school, when a student with a particular health care need is in attendance. Information should be available as part of "ongoing professional development" and be accessed by teachers as needed. One teacher wrote, "...dependent upon assignment of a teacher, different degrees of each skill would be necessary (i.e., special needs teacher will require a deeper knowledge of Cluster 10 than a regular classroom one)." Several teachers also suggested that basic first aid and sex education be added as items within the cluster.

Within Group Differences. Data were analyzed to determine if there were significant differences in response rates within groups. Responses from educators were analyzed according to their teaching assignment (i.e., elementary regular education, elementary special education, secondary regular education, secondary special education, and administration); the size of the school's community (i.e., city of more than 30,000, municipality of 10,000-

30,000, and rural setting); and the number of years of teaching experience in an inclusive setting. Responses from undergraduates were also analyzed according to their proposed teaching area (i.e., elementary or secondary education) and whether or not the students' area of focus included special education. Because of the small sample size obtained from faculty members, no additional analyses were conducted using this group. Group differences that tended to repeat themselves in the data (*i.e., a significant difference of* $p \leq .01$ in more than five of the ninety-three items in the survey) are mentioned below.

Significant differences that occurred between educators depended on the educator's teaching assignment. In contrast to other teaching assignments (e.g., elementary regular and special education, secondary special education, and administration), secondary education teachers tended to choose "consultants role" more often in seven of the 10 clusters (e.g., Screening Children to Identify Special Needs - three items, Instructional Delivery to Diverse - four items, Classroom Management- three items, Behavior Management - three items, Knowledge about exceptional three items, Collaboration with Families and Professionals - two items, and Health Care -three items).

Within group differences also arose depending on an undergraduates' proposed teaching area (i.e., elementary or secondary education). For example, secondary undergraduates selected 'consultant role' significantly more often than elementary undergraduates in the following clusters: Screening Children to Identify Special Needs - three items, Instructional Planning - three items, Instructional Delivery to Diverse Students - six items, Classroom Management - two items, Behavior Management - two items, Knowledge of Exceptional Students -six items, and Health care Issues - two items. In addition, secondary students also choose 'all teachers' proportionately less often than elementary students in the following clusters: Individualized Assessment - four items, Instructional Planing- three items, Instructional Delivery to Diverse Students - five items, Classroom management - two items, Knowledge of Exceptional students – five.

The trend for secondary undergraduates and secondary educators to select 'special consultant more often' and 'all teachers' less often may reflect secondary teachers perception that they 'specialize' in one or two subject areas and traditionally have not been involved in interdisciplinary challenges.

Discussion and Recommendations

This survey identifies clusters and cluster items that should be critical components of preservice training if teachers are to be prepared to teach in inclusive settings (see Table 2.3). Survey results, in which the majority of respondents selected classroom management, instructional planning, behavior management and instructional delivery as priority areas for teacher training are also congruent with recommendations by other researchers advocating change or restructuring to teacher education programs (Guetzloe, 1999; Hamill, Jantzen, & Bargerhuff, 1999; Katsiyannis, Ellenburg & Acton, 2000; Peterson & Beloin, 1998). Many instructors are restructuring their mainstreaming courses in order to meet the needs of teachers working in inclusive settings. These instructors are spending less time focusing on categorical disabilities and more time on daily practices (Johnson, 1999; Lesar et al., 1997; Peterson & Beloin, 1998). Daily practices include developing accommodations, behavioral supports, learning how to plan and teach together, alternative assessment, and developing peer and teacher supports. It seems appropriate then that classes on inclusion include those items listed as top priority in Table 2.3.

Many of the topics of high priority identified in Table 2.3 are currently being included in an undergraduate course on inclusion, which is required by both elementary and secondary students in the Faculty of Education at the University of Alberta. Topics of high priority are also covered in other undergraduate courses at the university, but unlike the course on inclusion, they are not presented in a required course for all education students. In similar attempts to provide general educators with some of the competencies required for successful inclusion, many universities have required students to take a course on inclusion (Johnson, 1999; Lesar et al., 1997). However, introductory courses are proving ineffective.

Preservice teachers cannot learn skills for meeting the needs of diverse learners in one course. There is a growing belief that general and special educators require skills in both disciplines in order to adequately meet the needs of diverse students in regular classroom (Hutchison & Martin, 1999, Lesar et al., 1997).

Competencies and skills required for inclusion should be integrated within the general education training program (Lesar et al., 1997). It is clear then that a coordinated effort is necessary to ensure that preservice teachers receive adequate training. Many of the items identified in the survey should also be covered in other courses, so that students receive instruction in the content areas from a variety of perspectives. For example, Multilevel Instruction, Cooperative Learning, and Motivating Students could be addressed in some way in all curriculum courses. Teacher education programs need to look beyond the one or two courses on exceptionalities. These courses tend to focus on the descriptions of various disabilities and leave students with the impression they need to develop different instructional strategies for each student with special needs (Peterson & Beloin, 1998). Courses on exceptionalities need to focus on curriculum adaptations, building support teams for *both* students and teachers, and teaching collaboration within and across disciplines. Researchers are also advocating that preservice teachers have the opportunity to practice and observe authentic teaching situations early in their program (Mallette, Maheady, & Harper, 1999; Peterson & Beloin, 1998; Sobel, French & Filbin, 1998).

Traditionally many of the *'clusters items'* identified as medium priority (see Table 2.6) have been taught to students who are studying special education, and it would be impossible to cover all of these items in one or two courses on exceptionalities. In order to increase the knowledge base of all teachers, some universities are calling for the merger of general and special education content in teacher preparation programs (Ferguson, 1999; Flynt, Dyal, & Morton, 1998; Hewitt, 1999; Lupart, 2000). The outcome of this merger would result in teachers who have general knowledge about a wide variety of special needs, and for some teachers "an add-on specialty endorsement". Ferguson (1999) refers to these teachers as "hybrid teachers" who have studied the best parts of "special" and "regular" education, and who, collectively, could meet the needs of a variety of learners. However, schools will continue to require some teachers on staff who have the skills and knowledge to teach students with the most challenging behavioral, learning, and/or medical needs. These teachers will also require the skills and knowledge necessary to work collaboratively with teachers who do not have such specialized training.

Although none of the *clusters* were rated as low priority (identified by less than 50% of the respondents as important for all teachers), some of the *cluster items* were rated as low priority (see Table 2.7). It is possible that some of these items need not be addressed in the teacher education program (e.g., hearing aid maintenance, assistance with oral feedings). Other faculties (e.g., Nursing, Rehabilitation Medicine) provide professional training that includes content addressing some of these cluster items. Collaboration across faculties would assist graduates from various disciplines to work towards common goals at the classroom level. Furthermore, training needs for cluster items which are highly specialized (e.g., knowledge about students with Chronic Health Impairments, Hearing Aid Maintenance, and Assistance with Oral Feeding), may be best met through consultation between teachers and experts on an "as needed" basis. These training needs will depend largely on the unique characteristics of the students in each classroom and will vary from year to year.

Because training-needs of teachers will change from year-to-year, preservice teachers need to be exposed to the concept of "life-long learning." They should become familiar with, and learn to initiate and participate in various forms of professional development activities during their preservice training. They should be encouraged to participate in various teacher-support groups and connect with mentors, contribute to discussion groups on inclusive education, access community-based professional library of books and resources, and attend regional, national, and international forums and conferences. More importantly, students should be encouraged to collaborate with other students in their faculty, in other disciplines, and with professionals in the community as a method of learning how to meet the needs of students with diverse needs in the regular classroom. Many studies have concluded that collaborative problem-solving is an essential element of effective professional development (Dunne, Nave, & Lewis, 2000; Hawley & Valli, 2000); moreover, collaboration is recognized essential if inclusion is to be successful (Aiello & Bullock, 1999; Federico, Herrold, & Venn, 1999; Lupart, 2000).

Curiously, items within the cluster collaboration were identified as items required by 'all teachers', yet the cluster itself was ranked only 8 out of 10 in terms of priority. Quite possibly, this low ranking could be the result of limited exposure to collaboration by the survey group, as collaboration between special educators and regular educators (i.e., team-teaching, co-teaching, and special educators as consultants) is a relatively new concept. Again, areas of instruction like collaboration, are likely to be important areas of instruction in preservice teacher programs in the next decade.

Meeting the training needs of all teachers working in inclusive settings needs to be ongoing and dynamic. To be most effective, this training will have to be creative and innovative. No teacher will be able to meet the needs of *all students* without the continued support of others and the establishment of a comprehensive, easily accessible resource base. In the preceding paper, I hope to have evaluated those areas that are perhaps the most important areas for training teachers. Rated highest priority by all survey respondents were: Classroom Management, Instructional Planning, and Behavior Management, these program areas will doubtless form the priority area of instruction for educators in the next decade.

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APPENDIX A
INCLUSIVE EDUCATION SURVEY
UNIVERSITY OF ALBERTA

INSTRUCTIONS

1. Please indicate **WHO** you think needs preparation in these areas by circling the letter representing your response:

   N = No one
   A = All teachers (Required for B. Ed.)
   C = Specialist Consultants (Required for Special Ed Majors)
   S = Student's option (Elective)

2. Please **RANK** how important preparation in this area is for ALL TEACHERS:

   1 = most important
   2 = second most important
   3 = third...
   and so on . . .

   PLEASE USE EACH RANKING ONLY ONCE.

3. If you are unsure about your response, please indicate **NA** in the appropriate box.

4. When you have completed the survey, please return in the enclosed envelope within two weeks

PART A. CLUSTER RANKINGS

CLUSTER	WHO	RANK
Foundations of Inclusive Education	N A C S	
Screening Children to Identify Special Needs	N A C S	
Individualized Assessment	N A C S	
Instructional Planning	N A C S	
Instructional Delivery to Diverse Students	N A C S	
Classroom Management	N A C S	
Behavior Management	N A C S	
Knowledge about Exceptional Students	N A C S	
Collaboration with Families and Professionals	N A C S	
Health Care Issues in the School	N A C S	
Other	N A C S	

PART B. CLUSTERS

CLUSTER 1: FOUNDATIONS OF INCLUSIVE EDUCATION

CONTENT AREA	WHO	RANK
Philosophical & Ethical Foundations	N A C S	
Research on Inclusion	N A C S	
Social Foundations of Inclusion	N A C S	
Attitudes Toward Inclusion	N A C S	
History of Special & Inclusive Education	N A C S	
Other:	N A C S	

CLUSTER 2: SCREENING CHILDREN TO IDENTIFY SPECIAL NEEDS.

CONTENT AREA	WHO	RANK
Signs of Hearing Impairment	N A C S	
Signs of Giftedness & Special Talents	N A C S	
Signs of Visual Impairment	N A C S	
Signs of Language Impairment	N A C S	
Signs of Cognitive Impairment	N A C S	
Signs of Learning Disabilities	N A C S	
Signs of Social, Emotional, or Behavioral Difficulties	N A C S	
Signs of Multiple Disabilities	N A C S	
Signs of Family Violence	N A C S	
Signs of Substance Abuse	N A C S	
Psychological Evaluation & Interpretation	N A C S	
Referring Students for Further Evaluation	N A C S	
Other:	N A C S	

CLUSTER 3: INDIVIDUALIZED ASSESSMENT

CONTENT AREA	WHO	RANK
Limits of Standardized Testing	N A C S	
Adapting Assessments to Individual Differences	N A C S	
Natural Observation	N A C S	
Performance-Based Testing (Criterion-Referenced)	N A C S	
Testing Validity for Child's Social Context	N A C S	
Transitionally-Based Assessment	N A C S	
Understanding Test Results	N A C S	
Using Criteria to Guide Decisions (Program Planning)	N A C S	
Measuring and Reporting Student Progress	N A C S	
Norm Referenced (Standardized) Assessment	N A C S	
Other:	N A C S	

CLUSTER 4: INSTRUCTIONAL PLANNING

CONTENT AREA	WHO	RANK
Individualized Educational Programs	N A C S	
Planning for Educational Transitions	N A C S	
Developing Goals and Objectives	N A C S	
Determining Criteria	N A C S	
Community-Referenced Curriculum	N A C S	
Curriculum-Based Instruction	N A C S	
Instructional Design	N A C S	
Other:	N A C S	

CLUSTER 5: INSTRUCTIONAL DELIVERY TO DIVERSE STUDENTS

CONTENT AREA	WHO	RANK
Mixed-Group Instruction	N A C S	
Cooperative Learning	N A C S	
Peer Tutoring	N A C S	
Community-Based Instruction	N A C S	
Problem Solving	N A C S	
School-wide Assistance Teams	N A C S	
Curriculum Overlapping	N A C S	
Parallel Learning	N A C S	
Multilevel Instruction	N A C S	
Cognitive Strategies and Learning Styles	N A C S	
Whole Language Instruction	N A C S	
Other:	N A C S	

CLUSTER 6: CLASSROOM MANAGEMENT

CONTENT AREA	WHO	RANK
Proactive Classroom Management	N A C S	
Crisis Management	N A C S	
Planning and Scheduling Strategies	N A C S	
Theories and Techniques of Classroom Management	N A C S	
Adapting Curriculum to Multiple Levels of Classroom Management	N A C S	
Implementing Organizational Strategies	N A C S	
Grouping Strategies	N A C S	
Managing Transitions	N A C S	
Questioning Strategies	N A C S	
Facilitating Inclusion among Students	N A C S	
Other:	N A C S	

CLUSTER 7: BEHAVIOR MANAGEMENT

CONTENT AREA	WHO	RANK
Motivating Students	N A C S	
Reducing Problem Behavior	N A C S	
Knowing When to Request Help	N A C S	
Nonviolent Self-Defense	N A C S	
Conflict and Anger Management	N A C S	
Applied Behavior Analysis	N A C S	
Student Self-Management Strategies	N A C S	
Establishing and Communicating Expectations	N A C S	
Behavior Contracting	N A C S	
Other:	N A C S	

CLUSTER 8: KNOWLEDGE ABOUT EXCEPTIONAL STUDENTS

CONTENT AREA	WHO	RANK
Students with Cognitive Impairment	N A C S	
Students with Learning Disabilities	N A C S	
Students with Attention Deficit Disorders	N A C S	
Students with Visual Impairment	N A C S	
Students with Hearing Impairment	N A C S	
Students with Speech and Language Impairment	N A C S	
Students with Behavioral/Emotional Impairments	N A C S	
Students with Mobility Impairment	N A C S	
Students with Chronic Health Impairments	N A C S	
Students with Special Gifts and Talents	N A C S	
Students from Culturally Diverse Backgrounds	N A C S	
Other:	N A C S	

CLUSTER 9: COLLABORATION WITH FAMILIES AND PROFESSIONALS

CONTENT AREA	WHO	RANK
Parent-Teacher Communication	N A C S	
Student-Teacher Communication	N A C S	
Involving Families in Educational Programs	N A C S	
Responding to the Needs of Families	N A C S	
Transdisciplinary Teamwork: Models and Applications	N A C S	
Working with Others (e.g., Teacher Assistants, Consultants, Teachers)	N A C S	
Accessing Resources to Support Individual Needs	N A C S	
Other:	N A C S	

CLUSTER 10: HEALTH CARE ISSUES IN THE SCHOOL

CONTENT AREA	WHO	RANK
Students with Epilepsy	N A C S	
Students with Cerebral Palsy	N A C S	
Airway Obstruction Prevention and Treatment	N A C S	
Medications Commonly Used with School Children	N A C S	
Hearing Aid Maintenance	N A C S	
Students with Asthma	N A C S	
Classroom Emergencies	N A C S	
Working with the Health-Care Team	N A C S	
Assistance with Oral Feeding	N A C S	
Toileting Procedures	N A C S	
Urinary Catheterization	N A C S	
Other:	N A C S	

CLUSTER 11: ANY OTHER PREPARATION CLUSTER YOU WOULD LIKE TO SEE INCLUDED (PLEASE SPECIFY NAME OF CLUSTER HERE)

____

CONTENT AREA	WHO	RANK
	N A C S	
	N A C S	
	N A C S	
	N A C S	
	N A C S	
	N A C S	
	N A C S	
	N A C S	
	N A C S	
	N A C S	

DEMOGRAPHIC INFORMATION - EDUCATORS

PLEASE ANSWER QUESTIONS 1 TO 7 BY PLACING A CHECK MARK IN THE APPROPRIATE BOX.

1. Which of the following best describes your assignment?
   - ☐ Regular Education Teacher (Elementary)
   - ☐ Special Education Teacher (Elementary)
   - ☐ Regular Education Teacher (Secondary)
   - ☐ Special Education Teacher (Secondary)
   - ☐ School Administrator
   - ☐ Other (please specify) ____________________________

2. Please indicate the school district in which you are employed: ____________________

3. Please indicate the type of school in which you work:
   ☐ K-12 ☐ K-9 ☐ 7-9 ☐ 7-12
   ☐ K-6 ☐ 10-12 ☐ Other (please specify) ______

4. Please indicate the size of your school:
   ☐ Small (1-199 Students) ☐ Medium (200-399 Students)
   ☐ Large (400 or more students)

5. Please indicate the population size in which your school is located:
   ☐ City of more than 30,000 ☐ Municipality of 10,000-30,000 ☐ Rural setting

6. Please indicate the number of years of teaching experience you have had:
   ☐ Less than 5 years ☐ 5 to 10 years ☐ More than 10 years

7. **Inclusive education** involves educating students in a regular classroom regardless of the nature of their disability.

a) If you are a **teacher**, please indicate the amount of experience that you have had working in an inclusive school setting:
☐ None ☐ Less than one year ☐ 1-3 years ☐ More than 3 years

b) If you are a **principal**, please indicate the number of years your school has been practicing inclusive education.
☐ None ☐ Less than one year ☐ 1-3 years ☐ More than 3 years

THANK YOU FOR YOUR PARTICIPATION IN THIS SURVEY.

DEMOGRAPHIC INFORMATION - FACULTY

PLEASE ANSWER QUESTIONS 1 TO 6 BY PLACING A CHECK MARK IN THE APPROPRIATE BOX.

1. Which of the following best describes your assignment?

☐ Professor
☐ Associate Professor
☐ Assistant Professor
☐ Lecturer
☐ Other (please specify) ______________________________

2. Please indicate your gender: ☐ Male ☐ Female

3. Please indicate your current department:

☐ Educational Policies and Studies
☐ Educational Psychology
☐ Elementary Education
☐ Secondary Education

4. How many years have you been on staff in the Faculty of Education?

☐ Less than 5 years ☐ 5 to 10 years ☐ More than 10 years

5. Are you a member of the Special Education Focus Area?

☐ Yes ☐ No

6. Have you ever taught a course in special education?

☐ Yes ☐ No

THANK YOU FOR YOUR PARTICIPATION IN THIS SURVEY.

DEMOGRAPHIC INFORMATION - PARENTS
Please answer questions 1 to 9 by placing a check mark in the appropriate boxes.

1. Person completing survey: ☐ Mother ☐ Father ☐ Other________________

2. Please indicate the age group to which you belong:
   ☐ 20 years or younger ☐ 21 to 25 years ☐ 26 to 30 years
   ☐ 31 to 40 years ☐ 41 to 50 years ☐ 51 or older

3. Indicate the type of setting in which you are currently living: ☐ Rural ☐ Urban

4. Do you have a child with an identified disability? (If **yes** please answer questions **5-9.**)
   ☐ Yes ☐ No

5. Please indicate those descriptors which best describe your child's disability:
   ☐ Dependent Mentally Handicapped
   ☐ Multi-Handicapped
   ☐ Severe Physically Handicapped
   ☐ Neurological Disorder
   ☐ Educable Mentally Handicapped
   ☐ Trainable Mentally Handicapped
   ☐ Gifted and Talented.
   ☐ Behavioral Disordered
   ☐ Severe Behavioral Disordered
   ☐ Learning Disabled
   ☐ Hearing Impaired
   ☐ Visually Impaired
   ☐ Speech and Language Impaired
   ☐ Other (please specify)________________

6. Please indicate the age group to which your child belongs:
   ☐ 0 to 2 years ☐ 6 to 8 years ☐ 12 to 14 years ☐ 3 to 5 years
   ☐ 9 to 11 years ☐ 14 to 21 years ☐ 22 years or older

7. Please indicate the type of program your child is currently attending:
   ☐ Infant ☐ Elementary ☐ Secondary ☐ None
   ☐ Preschool ☐ Junior High ☐ Adult

8. **Inclusive education** involves educating students in a regular classroom regardless of the nature of their disability.
   a) Has your child ever been placed in an **inclusive** educational setting?
   ☐ Yes ☐ No
   b) Has your child ever been placed in an **segregated** educational setting?
   ☐ Yes ☐ No

9. Which of the following best describes your child's current placement:
   ☐ Integrated 100% into a regular classroom.
   ☐ Partial integration, spends at least 75% of the time in a regular classroom.
   ☐ Partial integration, spends at least 50% of the time in a regular classroom.
   ☐ Partial integration, spends at least 25% of the time in a regular classroom.
   ☐ Currently placed full time in classroom for students with special needs.

THANK YOU FOR YOUR PARTICIPATION IN THIS SURVEY.

DEMOGRAPHIC INFORMATION - UNDERGRADUATE STUDENTS

PLEASE ANSWER QUESTIONS 1 TO 9 BY PLACING A CHECK MARK IN THE APPROPRIATE BOX.

1. Please indicate your gender: ☐ Male ☐ Female

2. Please indicate the age group to which you belong:
   ☐ 17 years or younger ☐ 18 to 25 years ☐ 26 to 30 years
   ☐ 31 to 40 years ☐ 41 to 50 years ☐ 51 or older

3. Please indicate the type of degree that you are working toward:
   ☐ B.Ed ☐ BPE/B.Ed. ☐ Other
   ☐ B.Ed/B.Sc. ☐ After Degree

4. Please indicate the current year of your program: 1 2 3 4 Other: ________.

5. Please indicate your proposed teaching area:
   ☐ Preschool ☐ Secondary
   ☐ Elementary ☐ Adult/Post Secondary

6. If you are working toward an elementary education degree, please indicate your area of focus:
   ☐ Special Education
   ☐ Language Learning
   ☐ Educational Psychology
   ☐ Self-Directed
   ☐ Math & Computer Applications
   ☐ Social Studies
   ☐ Second Languages
   ☐ Intercultural Education
   ☐ Learning Resources
   ☐ Early Childhood Education
   ☐ Science Education
   ☐ Teaching English as a Second Language
   ☐ Other (please specify) ____________________

7. If you are working toward a secondary education degree, please indicate your are of focus:
   ☐ Social Studies
   ☐ Second Languages
   ☐ Music
   ☐ Physical Education
   ☐ Mathematics & Computer Applications
   ☐ Art
   ☐ Industrial Education

8. If you are working toward a Secondary Degree is your minor Special Education?
   ☐ Yes ☐ No

9. Are you on practicum or have you completed practicum?
   ☐ Yes ☐ No

THANK YOU FOR YOUR PARTICIPATION IN THIS SURVEY.

DEMOGRAPHIC INFORMATION - GRADUATE STUDENTS

PLEASE ANSWER QUESTIONS 1 TO 98 BY PLACING A CHECK MARK IN THE APPROPRIATE BOX.

1. Please indicate your gender: ☐ Male ☐ Female

2. Please indicate the age group to which you belong:
   ☐ 17 years or younger ☐ 18 to 25 years ☐ 26 to 30 years
   ☐ 31 to 40 years ☐ 41 to 50 years ☐ 51 or older

3. Please indicate the type of degree that you are working toward:
   ☐ M.Ed ☐ Ph.D..

4. Please circle the current year of your program: 1 2 3 4 5 6+

5. Please indicate your current department:

   ☐ Educational Policies and Studies
   ☐ Educational Psychology
   ☐ Elementary Education
   ☐ Secondary Education

6. If you are in Educational Psychology, are you in Special Education?
   ☐ Yes ☐ No

7. If you are not in Special Education, have you taken any courses in Special Education?
   ☐ Yes ☐ No
   Which courses: ______________________________

8. Were these taken as a graduate or undergraduate?
   ☐ Graduate ☐ Undergraduate

THANK YOU FOR YOUR PARTICIPATION IN THIS SURVEY.

CHAPTER 3

Issues in Developing an Internet Course
for
Family Centered Practices in Early Intervention

Abstract

The need to create life-long learning opportunities and the increasing demand for flexible learning has resulted in a number of courses where the Internet is being used to customize learning opportunities for students. Specific design guidelines must be taken into consideration when planning a course for the Internet; these are presented in this paper. An Internet course was designed to teach family–centred practices in early intervention for children with special needs and their families. The aim of the course was to provide students with skills to strengthen and support family functioning. One component of the course involved students practicing skills learned while collaborating with families in the community. Students implemented weekly assignments on Family Centred Practices, Natural Teaching Strategies, and Cooperative Family Learning with families. Students also presented case studies and article summaries online, and participated in conferences related to the content of the course. Students participating in the course found both the delivery of instruction and the course content satisfactory. Suggestions for the design and delivery of online courses are reviewed.

Introduction

Universities are facing two dilemmas in meeting the needs of students seeking post-secondary educational opportunities. First, many students experience barriers that prevent them from accessing on-campus face-to-face instruction. Barriers involving time, place, and personal situations are creating the need for course work that is flexible and accessible off-campus. For these students, the "one-test/one-delivery-mode-fits-all" approach is becoming less desirable (Distance Education, 1999; West, 1999). Second, the realization that students cannot learn all there is to learn in a given field in a 4-year degree program, creates the desire for life long learning opportunities (Beller & Ehud, 1998; Distance Education, 1999; Robinson, Brewer, & Erickson, 1999).

In order to resolve these dilemmas, institutions are implementing a variety of courses involving distance learning and/or technology-enhanced courses. These courses are blurring the boundaries between campus-delivery, open learning systems, and distance education. Universities are adopting the term "distributed education" to define courses where technology is being used to customize learning environments to meet the diverse needs of their students (Distance Education, 1999). One form of "distributed education" involves students as online learners. Goodyear, Salmon, Spector, Steeples and Tickner (2001), define online teaching and learning as "teaching and learning that takes place over a computer network of some kind (e.g., an intranet or the Internet) and in which interaction between people is an important form of support for the learning process"(p. 68). In this chapter, I will briefly review some of the issues facing instructors who are designing on-line courses. I describe the development of an online course for graduate and undergraduate students studying family centered practices in early intervention and review the results of a student satisfaction survey.

Developing Online Courses

The design and implementation of Internet-based courses is an ongoing and time-consuming process. It involves more than the simple conversion of traditional course material into hypertext markup language (html) and posting these materials on the Internet. Instructors must first consider the appropriateness of their course materials for the Internet, what the role of an online instructor entails, various design guidelines, and the impact of online courses on learners.

Decision-making process. As a first step in the process, instructors need to consider whether or not their course materials are suited for an online learning environment. Judging the appropriateness of the content for the Web can be facilitated by identifying the target audience, identifying course goals and objectives, and identifying assessment procedures (Miltiadou & McIsaac, 2000). Examining exemplary online courses already being offered by various institutions and web-course templates provided by distance learning departments will also assist instructors in the decision-making process.

Many instructors begin the process of transferring course materials online by first supplementing their face-to-face courses with online course outlines, course readings, lectures notes, and even tutorials (Maddux, 1999). Maddux found that although initially time-consuming, placing supplementary materials online has many benefits. By placing supplementary materials online, Maddux found that he no longer had to deal with students who had missed lectures or who had lost handouts. More importantly, Maddux found that student performance increased over time as students were able to devote more class-time to listening as opposed to note-taking. Student performance was also enhanced by tutorials and class notes available to read at their leisure and on repeated occasions if necessary.

Roles of the online instructor. The next step in designing online courses is to determine which roles in the course an instructor will be able to fulfill and likewise, to determine where supports are needed. Online competency was the topic of a workshop attended by 25 practitioners and researchers from the United States, the United Kingdom, and other European countries (Goodyear, Salmon, Spector, Steeples, & Tickner, 2001). A major outcome of the workshop was the identification of eight roles for the online teachers. The eight roles included process facilitator, adviser-counselor, assessor, researcher, content facilitator, technologist, designer, and manager-administrator.

Processor facilitator involves welcoming students (e.g., introducing, familiarizing learners with the environment), establishing ground rules, creating community (e.g., providing positive feedback, allocating roles, maintaining effective groups), managing communication, modeling social behavior, and establishing own identity. The advisor-counselor role involves working with students on an individual basis and encouraging them to get the most out of their interactions with the course. The assessor is involved in providing grades and feedback. The researcher is responsible for keeping abreast of new information related to the content of the course. The content facilitator's role is concerned with enhancing the student's understanding of course content. The technologist is responsible for keeping abreast of technological advances, and incorporating new technologies where appropriate. The designer is involved during the 'precourse activity' and assists in designing worthwhile learning tasks. Finally, the manager-administrator oversees registration, security, record keeping, and so on. The importance of each role to an online learning situation will vary depending on characteristics of each course. However, instructors need to determine if they have the skills necessary to implement each role; and if not, identify which support person will be responsible for the implementation of each role (Goodyear et al., 2001).

Design guidelines. After determining if they have the skills and resources necessary to develop an online course, instructors need to consider various design guidelines and strategies for online courses. During the development phase, several esthetic design guidelines should be considered. For example, Collis and Winnips (1998) suggested placing navigation buttons on the same location on the screen, choosing appropriate backgrounds and text with good contrast, ensuring a print option is available, and incorporating menus that have at least four or five links. Miltiadou and McIsaac (2000) also suggested using an appropriate font style that is universal for PC and Macintosh computers, placing text and images consistently on each Web page, including a site map for easy access to all Web pages, and choosing subtle colors that compliment the content.

There are also several design guidelines that ensure students are engaged and actively participating in the learning process. For example, Miltiadou and McIsaac (2000) suggested enhancing the relevance of the course content to student background by incorporating case studies that approximate real-life situations. These case studies may be presented by either instructors or students. Winfield, Mealy, and Scheibel (1998) agree that relating content to real situations by using case studies enhances student participation. They also suggest using the following guidelines to enhance student motivation and participation: (a) Choose activities that build user confidence with technology by having them submit a simple activity (such as introducing themselves to the group) before attempting a more difficult task (such as submitting an assignment with an attachment). (b) Build in the instructor's presence and personality by having instructors post weekly announcements and model an informal style of communication during e-mail correspondence. (c) Provide a clear set of weekly learning activities. (d) Build on personal and professional experience of participants by providing opportunities for students to relate content to personal practice. (e) Finally, build in collaboration and facilitated team projects.

Impact on online learners. In addition to design considerations, instructors need to be aware of the impact of online learning process on students. Research has documented feelings of distress and isolation by students participating in distance and/or online courses (Hara & Kling, 2000; Hutton, 1999; Morrison & Adcock, 1999; Vrasidas & Stock McIsaac, 1999). Interaction is a key component in a learning experience and distance from campus and feelings of isolation can affect the number of interactions in a course (Hara & Kling, 2000; Morrison & Adcock, 1999). Number of interactions is one of the most significant factors that contribute to a course's success or failure. The absence of interaction can prevent a student from succeeding with a course and may even cause a student to drop out (Miltiadou & McIsaac, 2000).

Miltiadou and McIsaac describe four types of interaction in online courses: learner-content, learner-instructor, learner-learner, and learner-interface. Learner-content is the interaction between the learner and the topic of study. Learner-instructor interactions involves the instructor motivating and encouraging students to learn, assessing student progress, and maintaining their interest in the course content. Learner-learner interaction involves students communicating with other students via e-mail, bulletin boards, and/or chat rooms. Learner-interface interactions integrates the three previous types of interactions; that is, learners must be able to "use online technologies in order to interact and communicate with instructors, peers and the course content" (p. 127).

Feelings of isolation can also be reduced by creating a "sense of community" among students. A sense of community can be achieved by having students share personal profiles or introductions at the beginning of the course (Harrison & Bergen, 2000). These profiles or introductions provide students with the opportunity to identify with other students who have similar work experiences, personal experiences, or career aspirations which in turn decreases feeling of isolation. Private messages of support and public postings by the instructor also contribute to the development of the sense of community (Hutton, 1999). Furthermore, allocating a certain percentage of each student's grade to online discussion encourages student participation, fosters a community of learners, and increases interactions. Harrison and Bergen (2000) recommend allocating 20 percent of the student's mark to online participation.

The use of emoticons (i.e., the use of standard punctuation marks to express human emotions) during Internet instruction and correspondence also helps replace nonverbal cues that are present in face-to-face instructions, enhances a social presence, and can increase interactions (Morrison & Adcock, 1999; Vrasidas & Stock McIsaac, 1999). For example, expressing a different point of view or disagreement in an e-mail correspondence is interpreted less harshly if the comment is followed by a happy face emoticon [i.e., a semicolon followed by a dash and right bracket: ;-)].

Structured assignments, required interactions, and immediate feedback can also increase interactions during online courses. Often dialogue and interaction during online courses does not occur for many students unless "topics" for discussions are pre-scheduled; thus, the scheduling of structured required activities or assignments can also lead to more interaction and increased dialogue (Vrasidas & Stock McIssac, 1999). Many instructors use the e-mail system or listserves as platforms for online class discussions. Listserves have been identified as viable systems for graduate seminars (Morrison & Adcock, 1999). However, students and instructors can feel overwhelmed by the number of messages when using e-mail or listserves for class discussions. Morrison and Adcock (1999) advised using controls to limit discussions to manageable time frames (i.e., scheduling online chats, selecting specific days of the week to return messages and provide feedback on assignments).

Structured assignments and immediate feedback are even more imperative for courses where there is little or no face-to-face instruction. Many students, even in traditional classroom settings, do not complete assignments until they feel the pressure of assignment deadlines. During Internet courses, where students do not have the face-to-face contact or verbal reminders regarding assignments, procrastination tends to be exaggerated (Lamb & Smith, 1999). Tracking assignments, frequent feedback, and weekly reminders regarding readings is imperative for all students.

Despite the best planning efforts, problems will undoubtedly occur during online courses. Smith and Bencoster (1999) advised that instructors should expect hardware malfunctions, server connection problems, software installation problems, and software conflicts. Technical problems can also be augmented by students who use different platforms (e.g., PC verses Macintosh, Microsoft Explorer verses Netscape) or have their browsers set to different preferences (e.g., different fonts sizes and colors). Schnorr (1999) recommended that instructors consult with support persons from computer services, graphic artists and other Internet instructors in order to identify and alleviate difficulties that may arise when using alternative delivery formats. These same individuals can assist instructors with the application of basic design guidelines and increase the likelihood of successful implementation of online courses. In order to offset some of the problems associated with distributed education, many researchers also recommend having students in an Internet tutorial prior to or during the first week of classes (Hutton, 1999; Smith & Bencoster, 1999). Participation in an Internet tutorial enables students to focus on course content rather than technological process. These tutorials will also provide instructors with the opportunity to identify students who are experiencing technical problems early in the course so that the appropriate supports can be provided.

Family Resiliency Course

Acknowledging the difficulties experienced by instructors and students with Internet courses, researchers at the University of Alberta developed a course promoting family-centred practices and resiliency in families of children with developmental disabilities. Family-centred practices promote parents and families as equal partners in the intervention process. The goals of family-centered intervention include incorporating family coping; understanding child development; promoting appropriate parent-child interactions; and encouraging families in the assessment, planning, and evaluation of intervention (Bailey & Simeonsson, 1988).

The researchers chose the Internet as a format for instruction because it fulfilled many of the requirements presented in the planning phase for the course. That is, the online course reduced barriers such as time, place, and personal situations that many of the projected students would face. It was also hoped that the process of going through the course would develop an 'online community of learners' consisting of mentors (experienced practitioners in the field) and interns (students from the course). It was hoped that the students participating in the first offering of the course would become mentors for students in upcoming courses by continuing their participation in group discussions on the Listserver. Eventually past and present students would form a community of learners or mentors who would continue their interactions beyond the scope of the course. Organizations who use technology to provide efficient and affordable learning opportunities to the members of the community are referred to as "online learning communities" (Russell, 1999).

Course description. The Internet course developed for this article focused on resiliency and family-centred practices in early intervention for families of children with or at risk for developmental disabilities. In a report by Health Canada, Mangham, Reid, McGrath and Stewart (1994) defined resiliency as "the capability of individuals, families, groups, and communities to cope successfully in the face of significant adversity or risk. This capability changes over time, is enhanced by protective factors in the individual/system and the environment, and contributes to the maintenance and enhancement of health." Course content was based on the premise that all families are resilient, that all families have strengths and can learn, intervention and resources are devoted to the whole family, and families are seen as experts and partners in the decision-making process (Singer & Power, 1993). The aim of the course in this study was to provide students with skills to strengthen and support family functioning and resiliency. The course reviewed the knowledge, skills, and attitudes required in family-centred practices. Included in the course were eight modules. Throughout the modules, the links between the Family Adaptation Model and the enhancement of child and family resiliency processes were emphasized (McDonald et al., 1999). In a study conducted by Kysela, McDonald, Alexander, and Drummond (1996), the Family Adaptation Model was used to conceptualize the dimensions of family functioning. The results of the study suggested that family-centered early intervention should focus on personal and social supports and family coping in order to enhance and support positive family adaptation. In this course, students were encouraged to focus on strategies to support positive family adaptation.

It was hoped that during modules one, two, and three, the family-centred assessment and intervention planning approach used would promote the development of partnerships between professionals and as well as focus attention on child and family strengths and needs (Kysela et al., 1996). The Family Adaptation Model discussed in module one, included family-centred assessments in which interventionists assisted families in organizing assessment information into a family profile. The students used the adaptation model to organize demands, supports, coping strategies, adaptation skills, and beliefs and values of families into a family profile. This profile was then used to develop an Individual Family Plan (see McDonald et al., 1999, for a description of the process). During the process the interventionists and families addressed any barriers that might prevent attainment of adequate services identified as being important to them.

Modules four and five, which focused on Natural Teaching Strategies (NTS) were designed to influence family protective factors of effective parenting (McDonald, Alexander, Kysela, & Drummond, 1996). The strategies are "natural" in the sense that most parents have used these techniques at one time or another without prompting. They are also 'natural' because they can be used in the context of everyday activities. The developers of the course believed that the use of these techniques both consciously and selectively would have a positive effect on parent-child interactions and on the child's development. Natural Teaching Strategies assists the family-centred practitioner to help parents develop the following skills: following their child's lead, turn-taking through imitation, expansion of activities, teaching during naturally occurring times, and a positive approach to managing difficult behavior.

Modules six and seven, which focused on Cooperative Family Learning (CFL), were designed to enhance protective factors described as improvement of responses to difficult situations or a crisis (Drummond, Kysela, McDonald, Alexander, & Shank, 1996). The CFL organizes executive problem-solving skills into: W-What is the situation?; E-Evaluate the options; C-Can anyone help?; A-Agree; and N-Notice the difference (WE-CAN). The Cooperative Family Learning Approach emphasized a positive attitude, family cooperation, the clear definition of *family situations as opportunities for learning*, and the *importance of agreement*. The eighth module provided a summary and extension of the students' practices. The unique part of the course was that each participant worked with a family in discussing and completing various practice assignments in each of the eight modules for the course. For example, one assignment in Module 2 involved submitting a Family Profile Diagram, which summarized the family's beliefs and values, demands, adaptation skills, coping skills, and resources.

The course was offered as an undergraduate or graduate, 3-credit, course during the summer of 1997, winter of 1998, and winter of 1999. Students participated in the course through the Internet (http://www.quasar.ualberta.ca/cfrrp/cfrrp.html) and an automated mailing list management program called Majordomo. During the third offering of the course, the WebBoard, a Web-based conferencing system, replaced Majordomo. The WebBoard provided threaded discussions and enabled students to share information in an organized, central location on the Internet without having to send messages through their own personal e-mail systems (O'Reilly, 2000). Differences in expectations for undergraduate and graduate students can be found in the course outline in Appendix A.

It was not an objective of the course to compare the instructional effectiveness with that of other technologies, or face-to-face instruction. The process of developing and implementing the course was documented so that any lessons learned could be of use to other instructors developing courseware. In addition, a survey was distributed to course participants to determine if the students perceived Internet instruction as an effective medium through which to receive the content taught in the course.

Method

Course Development

The modules in the course were developed from three manuals used previously by the instructors: An Introduction to Family -Centered Practice (Alexander, Kysela, McDonald, & Drummond, 1996), Natural Teaching Strategies (McDonald et al., 1996), and Cooperative Family Learning (Drummond et al., 1996). These manuals were converted to Hypertext Markup Language (html) using Microsoft Office, Adobe Pagemill, and Adobe Photoshop. The research coordinator was assigned this task of transferring the manuals to html in a 6 month time line. The research coordinator assigned to the project had knowledge and experience working in early intervention, 2 years previous experience with html editing, graduate level courses in course-ware design, and access to technical support persons within the faculty. A computer support person with technical expertise reviewed the course to ensure that the interface was user friendly, and to ensure that the course adhered to design guidelines (i.e., appropriate graphics, universal font size, appropriate background and subtle color, etc). The three primary authors of the original manuals were content experts and reviewed the content of the course for content reliability.

The three primary authors of the original manuals used in the course also participated as instructors during the pilot course. The research coordinator, who transformed the manuals to html, acted as the technical assistant during the pilot. During the second course offering, the research coordinator served as co-instructor with another graduate student, and the initial instructors continued their participation as mentors to the new instructors. During the third course, the research coordinator instructed the course on her own. The course was offered by the Department of Educational Psychology at the University of Alberta in Edmonton, Alberta.

Participants

Instructors in the course solicited students for the first offering or pilot of the course from early intervention agencies with which they were affiliated. Students were given financial assistance with their tuition during the pilot to help offset the cost of obtaining Internet hookup. (Note: In 1997 all students had to obtain Internet hookup in order to participate in the course; however, in 1999, 90% of the students had Internet hookup prior to course.) Twelve female students enrolled in the first course offering and 11 of the students required an extension in order to complete the course (i.e., these students could not complete the course requirements in the standard 4 month term). During the pilot, the content, assignments, and design of the course were edited based on student feedback. During the second course offering, 16 students (1 male and 15 female) registered for the course. One student withdrew from the course, and only one student required an extension. During the third course offering, 10 female students registered for the course, one student withdrew from the course, and no extensions were required. It is assumed that the changes made to the course after the pilot resulted in the majority of students completing the course within the scheduled requirements. Students for the second and third offerings of the course were recruited in the same manner as other courses offered by the department (i.e., they were not recruited from agencies or given financial assistance).

Course Requirements

During the course, students developed the skills to utilize family-centered approaches with parents and children through case studies and work with families who were not clients or recipients of any services from the course participant. If the student had worked with families of children with special needs in the past, they could select a family who had a child under the age of 5 years identified as having special needs. If the student was new to the field, it was recommended that they work with a family who had a typically developing child under 5 years.

Regular participation and submission of assignments on a weekly basis were required by all students. A copy of the course outline, which included a detailed overview of the course assignments and weightings of assignments, was available several weeks in advance of the course start date. Although the course was provided in its entirety over the Internet, all rules governed by other University courses still applied. There were no textbooks required for this course; all course materials were available on-line. Webpages consisted of black font on white background for ease of printing. Students were also required to have access to electronic mail as well as the Internet. Netscape 3.0 or Internet Explorer 3.0 (or higher) were the preferred browsers for this course.

Because students were presenting case studies online based on their work with their families, access to the course needed to be restricted to those affiliated with the course. Therefore, user identification and passwords were required by all students accessing the course. In addition, students were also instructed to use fictitious names or family initials when referring to their families in group discussions and course assignments. Students were expected to submit assignments based on their work with families approximately every 2 weeks. Their assignments were posted on the Internet at individual feedback pages assigned to each student. During the pilot, students were provided a Uniform Resource Locator (URL, a place on the Internet) where their assignments, feedback comments, and grades would be located. These URL's were not linked to information in the course; therefore, individuals needed to know their URL address in order to access the information. However, during the second and third course offerings, students were also provided with user names and passwords in order to access their feedback page. The Gate Keeper, a Javascript protection device of low security, was used to assign user identification and passwords to limit access to the feedback menu (Barta, 2000). All assignments were posted at a feedback menu with comments within 5 days of the instructor receiving the assignments.

Course Assignments

During the pilot project, students were expected to complete the following: (a). A two page critique of the information presented in modules one, two, and three; (b) a summary paper based on information presented in modules 4 and 5; (c) a summary paper based on information presented in modules 6 and 7; (d) 12 family worksheets; and (e) a final paper (Appendix A includes a copy of the course outline). The worksheets involved activities that the student introduced on a weekly basis with their family (see sample worksheet in Figure 3.1.). The worksheets were left for the family to complete, and the student reviewed each worksheet with the family the

Figure 3.1. Sample worksheet submitted by a student.

Incidental Teaching (Keeping Track) - Chart
Student: XXXXX
Date: XXXXX
Skill: Independent eating using a spoon.

Time of Day	Place	Prompt Used
Monday Breakfast	In the kitchen, John in his highchair.	Mom started out by holding John's hand on the spoon with her own (physical prompt). She scooped the food onto the spoon (while holding John's hand), and brought the spoon to his mouth.
Tuesday Supper (Daddy home)	In the kitchen, John in his highchair.	Mom started out by holding John's hand on the spoon with her own (physical prompt). She brought the spoon half-way to his mouth, let go, and let John finish.
Wednesday Breakfast	In the kitchen, John in his highchair.	Mom tried putting the spoon in John's hand from the start, but she ended up covered in food! For the second try, she again held the spoon hand over hand (physical prompt) and began lifting it to John's mouth. Again, she let go on the way to the mouth, but sooner than last time.
Thursday Supper	In the dining room at Grandma's, John is in a booster seat.	Mom put the spoon in John's hand, scooped the food, and John takes it to his mouth by himself (Mom guides his hand as necessary, and saves food from tipping off).
Friday Breakfast	In the kitchen, John is in his highchair.	Mom is now placing the food on the spoon, and handing it to John. John grasps spoon from Mom. When John takes spoon, Mom says, "o.k., John eat". John takes the spoon to his mouth and gets most of the food in. Mom praised John saying, "What a big boy. John's eating!".

following week prior to submitting it to the instructor for grading. Participation in the Listserve or WebBoard also contributed to the students' marks. Students could access comments regarding their worksheets and other assignments at their feedback menu page (see Appendix B for a sample feedback menu).

Survey

An online survey was part of the eighth module of the course (see Appendix C). Prior to accessing the survey, students read an information sheet about the research being conducted and each student indicated whether or not they agreed to participate in the research by clicking on an *agree* button. Prior to reaching the '*agree*' button on the screen, students scrolled through information regarding the research protocols. The protocols informed the students that their participation in the research project would involve completing a survey about the use of Internet instruction during the course, as well as the questions relating to course content. Students were assured that their participation in the study was voluntary and would remain confidential. They were also assured that their marks in the course would not be affected by their decision to participate in the research study. Surveys were forwarded (by form via the Internet) to a graduate student not affiliated with the course, and students were informed that the surveys would not be opened until the final grades of the course have been submitted and confirmed by the department. If students clicked the 'agree' button on the survey information page, this then indicated that they had consented to having all forms of electronic communication and exchange, including e-mail, newsgroup, conferencing, and assignments to be recorded and used for research purposes.

The survey included 44 questions covering personal satisfaction with the course, design and navigation of the course, medium of instruction, and course content. Students graded each question on a five-point Likert scale (Tuckman, 1994). Space was provided at the end of the form for students to elaborate on the strengths and weaknesses of the course, the assignment requirements for the course, and any other additional comments they wished to add. Students were also asked to provide a copy of the parent survey and ask their cooperating family if they would be willing to complete the survey and return the survey by mail.

Parent Survey. At the end of the course, students also provided families with a survey evaluating the techniques illustrated throughout the course. The survey included 31 questions relating to family-centred practices, natural teaching strategies, and cooperative family learning. Parents graded each question on a five-point Likert scale. Space was provided at the end of the form for parents to elaborate on strategies that they found most useful, as well as any other additional comments they wished to add.

Results

Student Demographics

A total of 38 students registered for the course over three course offerings (10 during spring/summer session 1997, 16 during winter session, 1998, and 12 during winter session, 1999). Thirty-two of these students lived within commuting distance to the University, three students were outside commuting distance, one student was out-of-province, and two students were out-of-country. Of 38 students, 18 (one male and 17 female) submitted the online survey. Of the 18 students, seven participated in the pilot project, nine participated in the second course offering, and two participated in the third course offering. The majority of the students (n=15) lived in urban settings, the remaining three lived in rural settings. Thirteen of these students also worked in an urban setting (city of more than 30,000), three worked in a municipality (population between 10,000 and 30,000) and one worked in a rural setting. The remaining students were not employed at the time of the course. Eight of the students were 40 years of age or older, seven were between 30 and 40 years of age, and three were between 18 and 29 years of age. Ten of the students submitting surveys were post-degree students and eight were registered as undergraduates. Nine of the students were from the Faculty of Education, three students were from the Faculty of Nursing, two students were obtaining degrees in Community Rehabilitation, and four students were registered speech and language pathologists.

Computer Experience

Seven students (39%) had over 5 years of experience in working with computers, eight students (44%) had one to five years of experience in working with computers, and three students (17%) had been working on computers for less than one year. For 12 of the 18 students (67%), navigating the Internet was a relatively new experience (i.e., less than 6 months working on the Internet), three students (17%) had 6 months to a year experience on the Internet, and three students (17%) had more than one year Internet experience. Experience using e-mail was also a relatively new experience for most students. Ten students (56%) had less that 6 months experience using e-mail, 2 students (11%) had been using e-mail for 6 months to a year, and 6 students (33%) had more than one year experience with e-mail. For all students, this was their first experience in using either the Majordomo listserve or the WebBoard as a conferencing system.

Survey Results

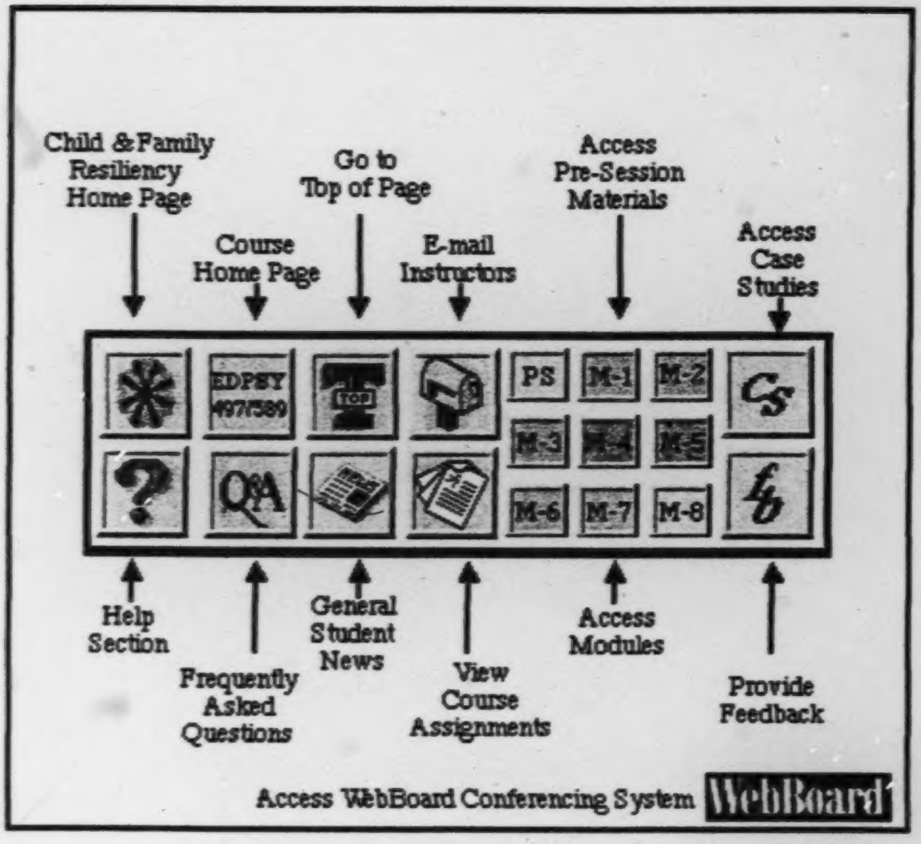
Personal Satisfaction

Thirty-three percent (6/18) respondents agreed that they felt some degree of frustration while taking the course. Three of these respondents were part of the pilot course offering and were without off-campus Internet access for the majority of the course. Four of the six respondents had less than 6 months experience working on the Internet or with an electronic mail system and struggled with the process. All other responses regarding satisfaction with the course were very positive. Eighty-eight percent of the respondents (16/18) reported feeling favorable towards the course content (13 strongly agreed, 3 agreed) and 88% (16/18) and were also satisfied with what they had learned while taking the course (10 strongly agreed, 6 agreed). Sixty seven percent (12/18) also agreed that the workload was appropriate, and 94% of the students (17/18) felt challenged to do their best work. Moreover, all students who responded to the survey would recommend this course to other students interested in the content.

Design and Navigation

Feedback regarding the design and navigation was positive. A map embedded with links was located at the bottom of each page. This map enabled students access to the various sections of the course regardless of their location within the course (see Figure 3.2). Eighty-three percent of the students (15/18) felt that the online materials

Figure 3.2. Course Navigation Map


Child & Family Resiliency Home Page
Course Home Page
Go to Top of Page
E-mail Instructors
Access Pre-Session Materials
Access Case Studies
EDPSY 497/589
TOP
Q&A
PS
M-1
M-2
M-3
M-4
M-5
M-6
M-7
M-8
CS
Help Section
Frequently Asked Questions
General Student News
View Course Assignments
Access Modules
Provide Feedback
Access WebBoard Conferencing System
WebBoard

were well organized, and 94% of the respondents (17 students) felt the objectives were clear.

Medium of Instruction

Despite the number of novice users in the course (i.e., 67% had less than 6 months experience in navigating the Internet), only one student from the second course offering felt that they were more involved in operating the computer than understanding course content. Fifty-five percent of the students (10/18) felt as if they had a private tutor, and 83% (15/18) felt as if they were engaged in conversation with the instructor or other students. Moreover, 83% disagreed when asked if they would rather have taken the course in a traditional classroom setting. One student commented that "classmates seemed to talk more than in some classroom situations", and four students felt that the "feedback on assignments seemed faster than lecture method."

Course Content

Feedback regarding the course content was extremely favorable. Most students indicated in their comments that they enjoyed putting "theory into practice" while working with their families. The "practical nature of the course" was repeated by many students as an area of strength. Also, 94% of the students (17/18) indicated that they would apply principles learned from the course to future situations. All modules within the course were rated as useful by the respondents (range 94% to 78%) with module 3, the development of an Individual Family Plan receiving the highest percentage of agreement (94%) and module 1, Resiliency and Family Adaptation, receiving the lowest percentage of agreement (78%).

Parent Surveys

Six families responded to the parent survey given to them by the students. The responses from these surveys were very positive. In general, all six families found the Natural Teaching Strategies (NTS) a helpful intervention and would recommend this intervention to other families. Five of the six respondents participated in the Cooperative Family Learning (CFL) modules. Again, these families found the intervention useful and would recommend the CFL intervention to other families.

Discussion and Recommendations

Although responses from the survey were very positive, problems often associated with distance education surfaced during the course offerings. For example, in the first course offering, students struggled with learning the technology as well as the course content. Also, in the first and second course offerings, some students experienced difficulty keeping up with e-mail correspondence as well as with course assignments. For most students in the first and second course offerings, assignments were overdue when submitted and many students required extensions in order to meet the requirements for the course. Finally, for many of these students, participation in online discussions was low. The following is a discussion of these issues and recommendations for addressing some of these issues.

Technological Problems

As Smith and Bencoster (1999) predicted, students in all course offerings experienced difficulties with computing technology. Although it was stipulated that access to the Internet and e-mail was a prerequisite for this course five of the 12 students in the first course offering started the course without having such access. During phone calls and e-mail correspondence, these students reported a very slow and frustrating start to the course. Also, difficulty obtaining reliable Internet access occurred during the pilot and the second course offerings. The majority of students enrolled in the pilot were using the University student pool in order to access their e-mail accounts and the Internet. Because of the high number of students using this system, many students had to wait until low-traffic hours (i.e., after 10:00 p.m. or prior to 8:00 a.m.) in order to access their accounts. However, during the second and third course sessions, most students were using their own Internet service provider and access to e-mail and the Internet was not an issue.

During the second course offering, students who where having difficulty were identified early in the term and weekly phone calls were made to encourage these students and to reinforce any progress they had made with both the technology and the course content. After 6 weeks, these students were fairly independent with the technology and were proficient and confident in meeting the requirements of the course.

During the third course offering, attempts were made to identify students experiencing technical difficulty prior to the course commencement by requiring students to submit an electronic form to the instructor before the first day of class. This online form included a checklist of activities for the student to complete (i.e., introduce self on the Webboard, identify an Internet service provider, select dates for presentation of case studies and article summaries, read the help section, etc.). The purpose of this form was two-fold. First, it was a simple activity and completion of the activities within the form would enhance the student's confidence with the technology (Miltadou & McIsaac, 2000). Second, missing or incomplete forms would alert the instructor to students who might need technical support. Providing early feedback to students who are experiencing frustration with technology will help reduce attrition (Miltiadou and McIsaac, 2000). During the third course offering, after 2 weeks into the course, the instructor did not receive any correspondence from students indicating that they were experiencing problems with the technology. In future course offerings, it can be expected that one or two students starting the Internet course will have little or no computer experience; technical support needs to be available to these students.

Assignments

As reported in the Results section, three students in the pilot project reported feelings of frustration with the course. Six pilot students were dissatisfied with the amount of work assigned during the course, deeming it excessive. Feedback from these students contributed to the overall lower percentage of personal satisfaction with the course. As a result of this negative feedback, the critiques and summary papers were changed to simple article summaries for subsequent course offerings (one article summary for undergraduate students, and two article summaries for graduate students). The number of worksheets to be completed by the students with their families was also reduced from 12 to 10. Despite these changes, students taking the second course continued to find the workload heavy. The workload assigned to the course was again reduced, the two article summaries were reduced to one for graduate level student only. Undergraduate students did not have to complete the article summary. During e-mail discussions in the third course offering, no students provided negative feedback to the instructor regarding the course workload

Procrastination

Because of the lack of face-to-face contact and verbal interaction with course instructors, some procrastination with assignments was expected (Lamb & Smith, 1999). However, the degree of procrastination that took place during this course was not anticipated. Initially, the student and volunteer family were allowed to proceed through the materials at a pace that was comfortable for both. It was hoped that this self-paced learning approach would encourage the students to take responsibility for their learning in a manner that is not possible in typical lecture-based course (Distance Education, 1999). Students were granted flexibility with submission of assignments (e.g., students could submit assignments at times convenient to their schedule). However, under these conditions students were not interacting with eachother in the course, and the course objectives were not being met. With the exception of one student, all students in the pilot required a 3-month extension to complete the course. Once extensions were granted, it was decided to provide specific time-lines for task completion. In the second offering of the course, guidelines were given for the submission of assignments at the onset of the course. As a result, only three students required extensions. Therefore, although the philosophy of Internet course is interpreted by many to mean 'complete the course at times convenient to the user' most students in this course required fairly specific guidelines in order to meet course requirements. A happy medium needs to be established between the flexibility of Internet courses and incentives/guidelines to help motivate students.

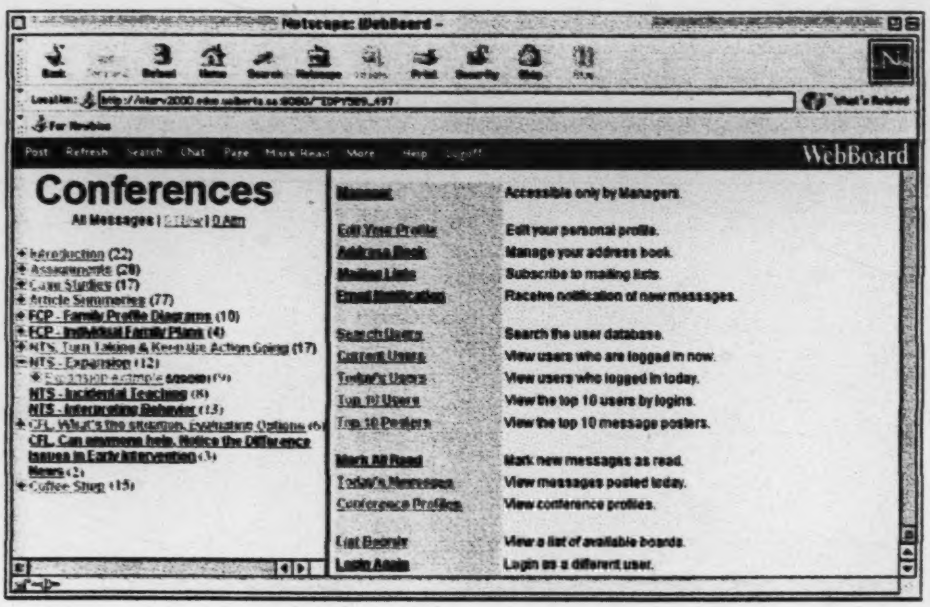
Participation in Discussion Groups

During the first offering of the course, Listserver participation was low, the average number of messages from students to the Listserver was approximately 7 messages per student over a 3 month period (range 1 to 20). After 6 weeks, attempts were made to increase interaction between students by altering the types of assignments. The instructor was more familiar with the online learning process and was able to select assignments (i.e., case studies and class presentations) that ensured students were actively participating in the learning process (Mitiadou & McIsaac, 2000; Winfield, Mealy, & Scheibel, 1998). The instructor also allocated 27% of the students' mark toward online participation. For graduate level students, 12 marks were allocated for WebBoard participation, 5 marks for presentation of a case study, and 10 marks for presentation of an article summary; this totaled 27 out of a possible 100 marks (27%). With these changes in place, the student involvement increased to an average of 12 messages per student over a 3-month period (range 3 to 29) during the second course offering.

During the third course offering, the WebBoard was used as a conferencing system. By providing a place for students to introduce themselves and meet with other students, the 'sense of community' among students was enhanced (Harrison & Bergen, 2000; Hutton, 1999). Conferences were set-up on the WebBoard which featured topics outlined in the course syllabus (see Figure 3.3). A 'coffee shop' was also set-up for students to 'chat' about any topic of interest, and students also had the

Figure 3.3.

Conference topics in the course Family Centered Practices in Early Intervention.


Netscape: WebBoard -
Back
Forward
Reload
Home
Search
Netscape
Print
Security
Shop
Location:
What's Related
For Newbies
Post
Refresh
Search
Chat
Page
Mark Read
More
Help
Logoff
WebBoard

Conferences

All Messages | 0 New | 0 Atn

- Introduction (22)
- Assessments (20)
- Case Studies (17)
- Article Summaries (77)
- FCP - Family Profile Diagrams (10)
- FCP - Individual Family Plans (4)
- NTS, Turn Taking & Keep the Action Going (17)
- NTS - Expansion (12)
  - Expansion example (9)
- NTS - Incidental Teaching (8)
- NTS - Interpreting Behavior (13)
- CFL, What's the situation, evaluation Options (6)
- CFL, Can anyone help, Notice the Difference
- Issues in Early Intervention (3)
- News (2)
- Coffee Shop (15)

Manager	Accessible only by Managers.
Edit Your Profile	Edit your personal profile.
Address Book	Manage your address book.
Mailing Lists	Subscribe to mailing lists.
Email Notification	Receive notification of new messages.
Search Users	Search the user database.
Current Users	View users who are logged in now.
Today's Users	View users who logged in today.
Top 10 Users	View the top 10 users by logins.
Top 10 Posters	View the top 10 message posters.
Mark All Read	Mark new messages as read.
Today's Messages	View messages posted today.
Conference Profiles	View conference profiles.
List Boards	View a list of available boards.
Login Again	Login as a different user.

option of 'talking' to each other simultaneously. With the change in conferencing system and previous changes in assignments, interactions among students increased from an average of seven messages per student over a 3-month period (pilot) to an average of 21 messages over a 3-month period (third course offering). This did not include the frequency of messages during 'chat sessions' (which occurred approximately three times during the course) or messages between students in the 'coffee shop'.

Although the increase in student interaction was a welcome change, many students commented during their 'chats' that "they found it overwhelming trying to catch-up with messages." During the last 'chat' of the course the students and the instructor agreed that specific timelines for discussion would have been helpful. For example, many thought that it would have been better if user-guidelines were in place to limit signing-on, and that no more should post more than ten messages per week.

Roles of the Online Instructor

The number of roles required of an online instructor will vary depending on the nature of the course (Goodyear et al., 2001). However, all six roles identified by Goodyear were implemented to varying degrees throughout the course. The challenge for this instructor was in balancing these roles. When weekly assignments were being submitted, traffic to the instructor's e-mail increased substantially. During this time, the instructor felt overwhelmed in trying to balance the roles as process facilitator and assessor. Also, when two or more students experienced difficulty with assignments or technical problems, the amount of one-on-one advising took precedence over other roles. During intensive advising times, roles as content facilitator and processor facilitator suffered. More research is needed in order to track the amount of time instructors spend in their various roles and to determine if the availability of supports (e.g., technical support persons, teaching assistants, team teaching) is fiscally viable. In a course of this nature, class sizes need to be remain small (i.e., a maximum of 15 students) if the instructor is to do an adequate job of balancing the roles of online instructors.

During the course offerings, the instructor kept track of some of 'lessons learned' and incorporated a checklist of strategies to enhance the learning process (see Table 3.1). These strategies were implemented during the third course offering. During that time, correspondence from students regarding medium of instruction and course content was very favorable. Students commented that they appreciated the flexibility associated with the course, and many spoke positively of the online discussions and 'chat groups'. For example, one student wrote "I appreciated the time [online discussions] gave me to reflect and respond, I truly did enjoy the experience." Another student wrote "when you chat online, you don't have to worry about looking dumb, I just figured I would ask my question, or give my answer, silly or not." In comparing on-line discussions to face-to-face discussions, one student commented "it certainly is a more balanced chat as everyone contributes feedback on pretty well all issues." The instructor also felt that the third course offering ran smoothly with little if any technological concerns. More importantly, the instructor came away from the course feeling positive about the amount of learning and interaction that had taken place. Lessons learned from the first and second course offering had made the third course offering a very positive learning experience. Of particular note was the

Table 3.1. Lessons Learned, Checklist of Strategies to Enhance the Learning Process.

1. Build a sense of community among the learners

☐ Provide students with a list of emoticons to convey emotional content such as sarcasm, laughter and other feelings as part of their e-mail correspondence.
☐ Provide a venue for students to chat with one-another
☐ Build in instructor presence and personality by posting e-mail messages on a regular basis, model an informal style of communication, and respond to e-mail messages promptly.
☐ Require students to introduce themselves.
☐ Choose assignments that require student interactions (have students present case studies and article summaries online, have students pair-up and present their partners assignment, have students take turns moderating discussions on article summaries)

2. Enhance learner-interface interaction
☐ Assign an activity that ensures students are accessing online materials prior to the start date of the course (e.g., students submits an online form which details their Internet service provider, browser, e-mail address, confirmation that they have read the help section and frequently asked question section FAQ's).
☐ Update the FAQ section each term based on feedback from students.
☐ Provide links to useful resources (library catalogue, and ERIC (The Educational Resources Information Center), course administrator, recommended browsers)
☐ Periodically check course materials on different platforms and browsers for presentation style.
☐ Accommodate students who prefer working with printed materials by having available a printed version of the course materials (or by keeping information on Webpage contained to 2 or 3 pages for convenient printing).

3. Be aware of the impact of online learning process on students.
☐ Provide 'chat' guidelines (i.e., reassure students that they do not need to log onto the WebBoard over weekends, encourage students to log on once a day.)
☐ Decrease procrastination by having students commit to assignments deadlines early in the course (i.e., choose dates for online presentations, submission of article summaries, and submission of papers). Post weekly reminders regarding assignments and upcoming events.
☐ Decrease student anxiety regarding submitting assignments and receiving feedback, by confirming receipt of assignments, providing estimated turn around times, and by providing samples of required assignments.

flexibility of the course and the practical nature of the course (i.e., working with families on assigned activities).

Conclusion

Developing an instructional course is an evolving process (Harrison & Bergen, 2000); as technology changes and instructors gain experience, online courses will be edited constantly to enhance to the learning process. Overall the use of the Internet to teach family–centred practices in early intervention for children having special needs and their families was a success. Yet, even with the experiences gained here, it is obvious that constant revision of course materials, introspection by instructors, and adoption of new technologies will be necessary to gain the most from this method of preservice instruction. Overall, distance education involving technology is a positive step towards meeting the needs of students seeking these types of post-secondary educational opportunities.

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Appendix A – Course Outline

Educational Psychology 497/ 589
Instructor:
Educational Psychology
6-102 Education North
Edmonton, Alberta
T6G 2G5

Family Centered Practices in Early Intervention

Course Outline

Course URL: http://www.quasar.ualberta.ca/cfrrp/crinfo.html
To obtain a user identification and password for the course please e-mail XXXXX
Registration Information:
E-mail: XXXXXXX
Ph: (780) 492 1151
Fax: (780) 492 1318

General Course Overview

The focus of this course consists of a review of the knowledge, skills, and attitudes required in family-centered practices. These competencies will be discussed and developed in the context of early intervention with children having special needs and their families, although some course participants may wish to apply the ideas of family centered practices with families of older children or adult members with special needs. Teachers, early interventionists, health care professionals and parents are particularly encouraged to participate. The course will be facilitated through Internet participation of both students and the instructors.

The links between the Family Adaptation and the enhancement of Child and Family Resiliency processes will be identified. Family-Centered Assessment and Intervention Planning Approach promotes the development of partnerships between professionals and families and is used to focus attention on child and family strengths and needs. From this profile, teachers, workers, children and families can then address any barriers preventing attainment of adequate services which they identify as being important to them.

Following the profiling of child and family strengths and needs, two approaches will be covered. The Natural Teaching Strategies Approach (NTS) is designed to influence family protective factors of effective parenting. The Natural Teaching Strategies Approach assists the family-centered practitioner to help parents develop the following skills: following their child's lead; turn-taking through imitation; expansion of activities; teaching during naturally occurring times; and a positive approach to managing difficult behavior.

The Cooperative Family Learning (CFL) Approach is designed to enhance protective factors described as improvement of responses to difficult situations or a crisis. The CFL organizes executive problem-solving skills into: W-What is the situation?; E-Evaluate the options; C-Can anyone help?; A-Agree; and N-Notice the difference (WE-CAN). The Cooperative Family Learning Approach emphasizes a positive attitude, family cooperation, the clear definition of family situations as opportunities, and the importance of agreement. In this course, participants will develop the skills to utilize these family-centered approaches with parents and children through case studies and work with a practice family who are not clients or recipients of any services from the course participant.

Course Sequence: The course is comprised of eight modules and should be studied in the order presented on the Internet. Regular participation and submission of assignments on a weekly basis is required by all students. Although the course is provided completely over the Internet, all rules governed by other University courses still apply.

Textbook: There are no textbooks required for this course. All course materials are available on-line. The URL for the course is:
http://www.quasar.ualberta.ca/cfrrp/crinfo.html

A user id and password is required by all students accessing the course. All students **must** have access to electronic mail as well as the Internet. Netscape 3.0 or higher or Internet Explorer 3.0 or higher are the preferred browsers for this course. Contact the instructor for more information about obtaining Internet access.

Tentative Course Outline & Assignments

Modules/Assignments	**Assignment Value**	
	497	589
Module 1: Resiliency and Family Adaptation.		
1. Summarize an article (589) which focuses on one dimension of the Family Adaptation Model (e.g., demands, supports, appraisals, coping or adaptations). Demonstrate how this dimension will influence your role (or practices) in working with families.		10
2. Case Study: Evaluation of a worksheet completed with your practice family.	5	5
Module 2: Developing a Family Profile. In collaboration with your practice family, submit a first draft of the Family Development. You will be required to edit your FPD for module 8 based on information your have learned throughout the course. (Mark will be given at the end of Module 8).		
Module 3: Development of an Individual Family Plan In collaboration with your practice family, develop an Individual Family Plan using the information gathered for the Family Profile in Module 2.	10	10
Module 4: Turn Taking and Expansion in Play with Children and Parents.		
1. Turn Taking Worksheet.	4	3
2. Keeping the Action Going (Wait-Signal-Prompt) Worksheet.	4	3
3. Expansion Worksheet.	8	6

Module 5: Incidental Teaching and Interpreting Behavior as Communicative.		
1. Incidental Teaching (Keeping Track) Worksheet.	4	3
2. Managing Behavior Worksheet.	4	3
Module 6: What is the Situation? and Evaluate the Options!		
1. We Can Summary Worksheet 1 & We Have the Skill Inventory.	4	3
2. '*What is Going On?*' Worksheet	4	3
Module 7: Can Anyone Help?, Agree!, and Notice the Difference!		
1. We Can Summary Worksheet 2.	4	3
2. We Can Summary Worksheet 3 & We Have the Skill Inventory.	8	6
Module 8: Summary and Extension of Your Practices.		
1. A brief paper (recommended length 6 pages) discussing how the Family Adaptation Model, Family-Centered approaches and Resiliency concepts will influence your current and future practices in working with families	20	20
2. Edit and resubmit your draft of the Family Profile Diagram (FPD) using information you have learned from the course.	10	10
Family-Resiliency WebBoard. Participation in the Family-Resiliency Web Board. Students will be expected to participate in class presentations of article summaries and case studies, and other ongoing discussions on the Listserver.	11	12
Total Marks:	**100**	**100**

Appendix B – Survey

Educational Psychology 497 & 589
Family Centered Practices in Early Intervention
Survey

ONLINE CONSENT FOR RESEARCH PARTICIPATION

Instructions: The University of Alberta has made a commitment to deliver educational material any time, any where. The Internet is one medium that is being used to achieve this goal. To ensure that the quality of education is not diminished by alternative forms of delivery, data will be collected to evaluate this form of instruction. Researchers from the University of Alberta will access these data in order to assess achievement and to evaluate the learning experience in general.

By clicking on the **agree button** below, I hereby give my consent to participate as a subject in an investigation conducted by Lorraine Macpherson-Court into **Internet Instruction, Meeting the Educational Needs of Students** as part of her dissertation research.

I understand that:

- My participation in this research will involve completing a survey about the use of Internet instruction during this course, as well as the questions relating to the course's content.
- My participation in this study is voluntary and may be terminated at any time by my request.
- My participation in this research will remain confidential. The results of the project will be coded in such a way that my identity will not be attached in any way to the data produced.
- The results of this research may be published or reported to government agencies, funding agencies, or scientific groups, but my name will not be associated in any way with any published results.
- My mark in the course will not be affected by my decision to participate in the research study.
- I understand that surveys will not be opened until the final grades of the course have been submitted and confirmed.
- All forms of electronic communication and exchange, including e-mail, newsgroup, conferencing, and assignments will be recorded. The data collected will be evaluated to determine the strengths and weaknesses of the program and the delivery method. In addition, the data collected will be used to assess the overall learning experience.

In the event that I have any questions, I can contact the researcher, Lorraine MacPherson-Court at (403) 492 8185 or by e-mail (lorraine.macpherson@ualberta.ca), her supervisor, Linda McDonald at (403) 492 2198 or by e-mail (linda.mcdonald@ualberta.ca), or the Chair, Research Committee, Department of Educational Psychology (e-mail dick.sobsey@ualberta.ca).

If desired, use the **print command** on your web-browser to generate a copy of this consent form before clicking on the AGREE button.

AGREE

Educational Psychology 497 & 589
Family Centered Practices in Early Intervention
Survey

Welcome ... Your contribution to this research is appreciated!

Part One: Background Information

1. Please indicate your course start date: ☐

2. Today's date: ☐

3. Please indicate your gender: ☐Male ☐Female

4. Please indicate the age group to which you belong:

☐18 to 25 years
☐26 to 30 years
☐31 to 40 years
☐41 to 50 years
☐51 or older

5. Indicate the type of setting in which you are currently living:
☐Rural
☐Urban

6. Please indicate the setting in which you are currently working:
☐City of more than 30,000
☐Municipality of 10,000-30,000
☐Rural setting

7. My University year is:
☐First ☐Second☐Third ☐Fourth☐Post-Degree

8. Please indicate the type of degree you are working towards: ☐

9. This course is a

☐Requirement ☐Elective ☐Other (Please Specify)

10. Please indicate the amount of experience that you have working with computers:

☐less than one year
☐one to 5 years
☐more than five years

11. Please indicate the amount of experience that you have had working on the Internet:

☐less than 6 months
☐6 months to a year
☐more than one year

12. Please indicate the amount of experience that you have had using e-mail:

☐less than 6 months
☐6 months to a year

☐more than one year

13. The Webbaord is the first chat group with which I have been subscribed:

☐Yes☐No

Part Two: Please indicate your degree of agreement or disagreement with each of the following statements by selecting the appropriate box.

Legend
SA - Strongly Agree
A - Agree
U - Undecided
D - Disagree
SD - Strongly Disagree

1. Nobody really cared whether I learned the course material or not.
☐SA☐A☐U☐D☐SD
2. I felt challenged to do my best work.
☐SA☐A☐U☐D☐SD
3. I felt as if someone were engaged in conversation with me.
☐SA☐A☐U☐D☐SD
4. As a result of having studied by this method, I am interested in learning more about the subject matter.
☐SA☐A☐U☐D☐SD
5. I was more involved in operating the microcomputer than in understanding the course material.
☐SA☐A☐U☐D☐SD
6. The learning was too mechanical.
☐SA☐A☐U☐D☐SD
7. The material was well organized.
☐SA☐A☐U☐D☐SD
8. I felt as if I had a private tutor.
☐SA☐A☐U☐D☐SD
9. My feeling toward the course material is favorable.
☐SA☐A☐U☐D☐SD
10. The objectives of the course are clear.
☐SA☐A☐U☐D☐SD
11. I felt frustrated by the situation.
☐SA☐A☐U☐D☐SD
12. Material which is otherwise interesting can be boring when presented on the Internet.
☐SA☐A☐U☐D☐SD
13. I am satisfied with what I learned while taking the course.
☐SA☐A☐U☐D☐SD
14. The workload for the course is appropriate.
☐SA☐A☐U☐D☐SD

15. In view of the amount I am learning, this method seems superior to classroom instruction for many courses.
☐SA☐A☐U☐D☐SD

16. I am concerned that I might not understand the material.
☐SA☐A☐U☐D☐SD

17. I feel uncertain as to my performance in the Internet course relative to the performance of others.
☐SA☐A☐U☐D☐SD

18. I find myself trying to get through the material rather than trying to learn.
☐SA☐A☐U☐D☐SD

19. I feel frustrated when using e-mail as a method of communication with my instructors.
☐SA☐A☐U☐D☐SD

20. Questions I have would be better answered in a traditional classroom setting.
☐SA☐A☐U☐D☐SD

21. Most subjects can be taught and presented over the Internet.
☐SA☐A☐U☐D☐SD

22. Material which is otherwise boring can be interesting when presented on the Internet.
☐SA☐A☐U☐D☐SD

23. I found navigation within the course easy.
☐SA☐A☐U☐D☐SD

24. Questions that I had throughout the course were easily answered.
☐SA☐A☐U☐D☐SD

25. I would prefer to take the course in a traditional classroom with an instructor.
☐SA☐A☐U☐D☐SD

26. I am learning to apply principles from this course to new situations.
☐SA☐A☐U☐D☐SD

27. It was easy for me to print and use materials from the Internet course.
☐SA☐A☐U☐D☐SD

28. I prefer correspondence materials over materials presented on the Internet.
☐SA☐A☐U☐D☐SD

29. I feel as if I could ask as many questions as needed through e-mail.
☐SA☐A☐U☐D☐SD

30. I would have prefered to have the materials presented in the course presented during professional development days at the agency with which I work.
☐SA☐A☐U☐D☐SD

31. I would have preferred to have the materials presented in the course offered during 'workshops' over several weekends but still for credit.
☐SA☐A☐U☐D☐SD

Part 3. Please indicate how useful you found each section of the course.

Legend
US - Useful
SU -Somewhat Useful
UN- Undecided

SNU - Somewhat Not Useful
NU- Not Useful

1. The Child and Family Resiliency ' Home Page.
☐ US ☐ SU ☐ UN ☐ SNU ☐ NU

2. E-mail system
☐ US ☐ SU ☐ UN ☐ SNU ☐ NU

3. Cs Case Study section
☐ US ☐ SU ☐ UN ☐ SNU ☐ NU

4. ? Help section.
☐ US ☐ SU ☐ UN ☐ SNU ☐ NU

5. Q&A Frequently Asked Questions
☐ US ☐ SU ☐ UN ☐ SNU ☐ NU

6. WEBBOARD
☐ US ☐ SU ☐ UN ☐ SNU ☐ NU

7. Index of assignments
☐ US ☐ SU ☐ UN ☐ SNU ☐ NU

8. PS Presession Study Requirements.
☐ US ☐ SU ☐ UN ☐ SNU ☐ NU

9. M-1 Module 1: Resiliency & Family Adaptation.
☐ US ☐ SU ☐ UN ☐ SNU ☐ NU

10. M-2 Module 2: Developing a Family Profile.

☐US☐SU☐UN ☐SNU☐NU

11. M-3 Module 3: Development of an Individual Family Plan.

☐US☐SU☐UN ☐SNU☐NU

12. M-4 Module 4: Turn Taking and Expansion in Play.

☐US☐SU☐UN ☐SNU☐NU

13. M-5 Module 5: Incidental Teaching and Interpreting Behavior.

☐US☐SU☐UN ☐SNU☐NU

14. M-6 Module 6: What is the Situation? and Evaluate the Options!

☐US☐SU☐UN ☐SNU☐NU

15. M-7 Module 7: Can Anyone Help?

☐US☐SU☐UN ☐SNU☐NU

Part 4. Comments

1. a) Would you recommend this course to a friend? ☐ yes ☐ no

b) Please elaborate:

2. What do you find are the strengths of this course?

3. What do you find are the weaknesses of this course?

4. Please comment on the assignment requirements for this course:

5. What additional comments or ideas can you offer at this time?

[Reset] [Submit]

Appendix C – Sample Student Feedback Menu

Student Name: **Course Number: EDPY 589**

Assignment:	Submitted	Marked
1. Module 1: Resiliency and Family Adaptation. Article Summary One (**9.5/10 marks**) Article Summary Two (**9/10 marks**)	☑ ☑	☑ ☑
2. Family Profile Diagram (Draft)	☑	☑
3. Individual Family Plan (**2.8/3 marks**)	☑	☑
4. Turn Taking Through Imitation Chart (**3/3 marks**)	☑	☑
5. Keeping the Action Going- WSP (**3/3 marks**)	☑	☑
6. Expansion Chart (**3/3 marks**)	☑	☑
7. Incidental Teaching (Keeping Track) Chart (**3/3 marks**)	☑	☑
8. Managing Behavior Chart (**2.8/3 marks**)	☑	☑
10. We Can Summary (One) & We Have the Skill Inventory (Baseline) (**3/3 marks for submission of both**)	☑	☑
12. What is Going On? (**3/3 marks**)	☑	☑
13. We Can Summary (Two) (**3/3 marks**)	☑	☑
14. We Can Summary (Three) & We Have the Skill Inventory (Final) (**2.8/3 marks**)	☑	☑
16. Case Study (**5/5 marks**)	☑	☑
17. Family Profile Diagram (Final) (**10/10 marks**)	☑	☑
18. Family-Resiliency Listserver Participation (**15/15 marks**)	☑	☑
19. Summary Paper (**18/20 marks**)	☑	☑

Mark Summary:

Assignment	Score

Article Summary One	9.5/10
Article Summary Two	9/10
Case Study	5/5
Family Development Plan	10/10
Family Worksheets	29.4/30
List Server Participation	15/15
Summary Paper	18/20
Total:	**95.9/100 Stanine: 9**

CHAPTER 4

Conclusion

The field of special education has been subject to tremendous change over the last few decades. Sources of recent change can be traced to the following: (a) the move from educating children in separate, full-time, special classrooms to regular classroom placements with specified supports; (b) the need to provide teachers with ongoing support and professional development; (c) the appreciation that preservice teachers cannot learn all there is to learn in a given field in a 4-year degree program; and (d) the realization that students require flexibility in terms of time, distance, and accessibility (Beller & Ehud, 1998; Hamill, Jantzen, & Bargerhuff, 1999; Hirtle, McGrew-Zoubi, & Lowery Moore, 1999; Lupart, 2000). Clearly, it will be a challenge for educators to address the need for change. First, however they must identify priority areas to change and, second, they will have to find methods through which to most effectively pursue such changes. In this dissertation, I have attempted to address this challenge.

In Chapter 1 I reviewed literature on educating students with disabilities in special classrooms to regular classrooms. In recent years, articles debating the "pros and cons" of inclusion have been replaced with articles researching process. Many school boards and universities across Canada and the United States are committed to the concept of inclusive education. Their focus now is to determine how best to meet the needs of teachers and students in inclusive settings. In Chapter 1, I reviewed articles describing innovative training programs and the competencies required of teachers working in inclusive settings were also reviewed. Recognizing the need to obtain detailed information on competencies required of teachers working in inclusive settings, the Task Force on Integration (University of Alberta) designed and conducted a survey on the content of preservice programs (McDonald, MacPherson-Court, Sobsey, & Rousseau, 1997). This survey was the focus of Chapter 2. The authors of this survey recognized that once training needs are identified, the methods required to distribute the appropriate information to educational professionals would have to be addressed. Chapter 1 highlighted the need for innovative educational opportunities that meet the learning needs of today's teachers. Professional development of preservice and service teachers will need to be tailored to the needs of today's learners. A large proportion of today's students are over the age of 25, non-residential, working fulltime, and many have a family (West, 1999). In addition, barriers involving time, place, and personal situations are creating the need for course work that is flexible and accessible off-campus. For these students the "one-test/one-delivery-mode-fits-all" approach is becoming less desirable (Distance Education, 1999; West, 1999). The realization that students cannot learn all there is to learn in a given field in a 4-year degree program, creates the desire for life long learning opportunities (Beller & Ehud, 1998; Distance Education, 1999; Robinson, Brewer, & Erickson, 1999). The need for flexible, life long learning opportunities for preservice and service teachers provided the rational for the design, implementation and survey of an Internet course in Chapter 3.

In Chapter 2, in order to best assess the requirements of teachers who are faced with the responsibility of educating children with diverse needs in the regular classroom, we allowed teachers to select topics of study for 'all teachers' and to rank subject areas that they felt were most important. Consensus on selected items and their ranking will probably point the way in terms of priorities for changes to preservice teacher education programs. Survey results in which the majority of respondents selected classroom management, instructional planning, behavior management and instructional delivery as priority areas for teacher training were congruent with recommendations by other researchers advocating change or restructuring to teacher education programs (Guetzloe, 1999; Hamill, Jantzen, & Bargerhuff, 1999; Katsiyannis, Ellenburg & Acton, 2000; Peterson & Beloin, 1998).

Results from Chapter 3 suggest that the Internet is an appropriate medium for distributing and gathering information to and from students. Even novice computer users featured in Chapter 3 were comfortable with using the Internet to compile and submit information. All students participating in the survey were favorable towards the course content and would recommend the course to other students. Chapter 3 also reviewed options for the design and delivery of courses delivered via the Internet. The process of building an Internet course was highlighted and lessons learned from the process were documented for others who may be undertaking a similar task.

Limitations

There were several limitations associated with the survey in chapter 2. First, many respondents commented that they found the length of the survey too long, and the instructions too complex (i.e., identifying priorities for teachers, as well as rank ordering items was reported 'difficult' by many). Also, many respondents commented that some clusters were repetitious in nature (e.g., Screening Children to Identify Special Needs and Knowledge about Exceptional Children, and Classroom Management and Behavior Management) and they found these clusters difficult to rank. Because details of the rank ordering of items within each category were also difficult to discern, many respondents either did not fully complete this section of the survey, or they assigned the same rank-order value to several items. As a result, 55.5% (573/1032) of the returned ranked portions of the surveys could not be used. It is interesting to speculate whether the use of the Internet could have been used to alleviate some of the problems associated with this type of survey.

Limitations of the Internet course featured in Chapter 3 included problems with sample size and lack of control group. The small sample size of the student group makes it important to be cautious when generalizing the results from this study to other courses. The lack of a control group makes it difficult to determine if the use of the Internet enhanced the learning process above that of face-to-face instruction.

Increasing the number of students participating in the Internet course could pose challenges for the instructor. The Internet course was offered a fourth time during the spring of 2001. During this course offering, 17 students participated in the course; the instructor had limited technical support (one hour per week) and as a result found it difficult to manage discussions as well as provide students with feedback regarding their assignments and work with families. Therefore increasing class size would require increasing the amount of technical support available to the instructor, and this support is usually not available for a class of this size.

If more technical support was available, increasing sample size would still be difficult due to the limited number of students requiring training in family centered practices. In order to truly assess the merits of the Internet course, a comparison to a traditional face-to-face lecture format is needed as a control. Finding enough students for both the Internet course and a control group could be problematic. The Internet course in Chapter 3 is only offered once a calendar year due to low student enrollment. Therefore finding a large enough sample for participation in both a control group and a traditional lecture format would be difficult. However, an Internet course (or module) on Inclusive Education which utilized a similar format to the Internet course presented in Chapter 3 may be an appropriate alternative. The numbers of preservice teachers attending traditional courses on Inclusion is quite high, and a sample of students from these courses could be selected to participate in an Internet course on Inclusion, while the remaining students attending the traditional course of Inclusion could be used as the control group.

Research Implications

It is likely that teacher competencies for working in inclusive settings will continue to change or will need to be modified rapidly based on the individual needs of each teacher. For that reason, new technology, namely the Internet, offers an exciting and progressive tool to deliver this education. Understanding teacher competencies in order to identify appropriate preservice and service education needs is an ongoing process. If these needs were identified by an online survey, it would be possible to determine priorities for preservice and service teacher training needs routinely and at minimal costs. The survey in Chapter 2 could easily be place online, updated on a regular basis, and various stakeholders could be invited to participate in the survey. Also, an Internet-based survey would alleviate some of the problems associated with the rank-ordering section of the survey in Chapter 2. For example, teachers could have submitted the survey using a form on the Internet and, in electronic format, this form could have been programmed to alert the user to correct unusable responses (e.g., when they tried to submit a survey that had either missing or incorrect data). The use of an Internet form then would have greatly reduced the number of discarded surveys.

Practical Implications

The Internet course in Chapter 3 also includes a framework that could be easily adapted to include various modules on inclusive education that would incorporate topics of highest priority identified in Chapter 2. For example, when participating in a field experience, preservice teachers might choose to complete a module(s) that would be most helpful to them given their current working conditions (e.g., classroom management, instructional planning, behavior management, etc.). Prior to commencing their practical experience in schools, preservice teachers could participate in either a face-to-face or an Internet overview of all inclusion modules. This overview would enable preservice teachers to make an educated choice as to which modules to complete during their practical experience. Similar to the course presented in Chapter 3, preservice teachers could submit practical assignments demonstrating their knowledge of key concepts presented in each module. Collaboration could be built into each module, encouraging students to discuss and share best practices during online discussion groups and by requiring students to present assignments and/or case studies online. Utilizing online modules would not only enable preservice teachers to collaborate with other preservice and service teachers; the linking of their experience with course content would enhance the learning process; similar conclusions have been drawn by Dinchak (1999) and Miltiadou and McIsaac (2000). Furthermore, students would have control over their learning and they would be exposed to a venue (i.e., the Internet) that would be available for future opportunities of "life long learning" (McGregor et al., 1998; Robinson, Brewer, & Erickson, 1999). For such a model of this nature to work, Universities and school systems will need to determine an appropriate workload for students participating in both inclusion modules and field experience.

It is also possible that these same Internet modules could be accessed by teachers for professional development as well as preservice teachers. Having the modules available to both preservice and service teachers could enhance the collaboration process as well as facilitate a mentoring relationship between experienced and novice teachers. However, one has to ask whether practicing teachers would access these modules for professional development?

Some researchers have addressed this question. For example, Grubb and Hines (1999) designed a course on technology used in distance courses for the university. All courses required combinations of face-to-face and distance instruction. The first two course offerings involved 43 faculty, and the third course offering involved 29 participants. Administration required faculty to participate during the first two offerings and these participants were also provided a stipend for their participation. During the third course offering, participation was voluntary and no stipend was provided. Changes were made for the second course offering to ensure faculty had adequate access to appropriate computer resources, and in the third course offering, materials were transferred from CD-ROM to the Internet. This last offering made it much easier for instructors to update, redesign, and/or rewrite materials as needed.

Of all groups, the second group was most successful in implementing significant amounts of technology and they continued to use knowledge gained from the course (i.e., 72% were using web-based e-mail and 56% had instructional web pages). The third course offering was least successful with only 2 out of 29 participants successfully completing the course requirements. Grubb and Hines concluded that administrative support and financial incentives are required in order to recognize individual faculty efforts to learn new technology. It is likely that teachers will also require incentives for participation in online modules on inclusion. Credit towards diplomas (or add-on specialties), financial incentives, and a reduced workload for teachers during course participation, are all areas which require further discussion and or study.

Developing a course is an ongoing and evolving process (Harrison & Bergen, 2000); as technology changes and instructors gain experience, online courses need to be edited and modified to enhance to the learning process, particularly as new technologies develop to augment the present format. The course described in Chapter 3 could now be enhanced by adding video snippets and case studies that illustrate various techniques described in the course for students to critique. Research into the utility of adding video snippets to a course of this nature should be conducted.

Also, if Internet modules on Inclusion were to be designed and implemented, further research will be needed to determine who will fulfill the various roles required of the instructor (e.g., process facilitator, adviser-counselor, assessor, researcher, content facilitator, technologist, designer, and manager-administrator) (Goodyear, Salmon, Spector, Steeples, & Tickner, 2001). Also, in order to ensure manageable workloads for both instructors and students, research and discussions regarding instructor-student ratios will be required. It is obvious that an increase in the number of students participating in an online course will increase the workload of the instructor. However, individual student workload will also increase as student numbers increase. For example, traffic to individual e-mails and discussion groups will naturally increase with the number of students in the class, requiring more time by students to read and respond to messages. Will the quality of online discussions and collaboration between students decrease with increases in class size? More research regarding optimal online class size is required for courses where collaboration between students and practical experience form the requirements of any Internet course.

Although the field of special education and regular education has been undergoing tremendous change and reform over the past decade, it is an exciting time for those trying to address the needs of teachers and preservice teachers. New technologies are offering exciting alternatives to help address the needs of educators as they face the challenges of meeting the needs of all students in the regular classroom. Over the next decade we will see many innovative models of preservice and service education incorporating technology to meet the training needs of educators. It will be the challenge for universities and other stakeholders to make use of these technological advances in order to better meet the needs of educators.

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